

# THE MINING AND METALLURGICAL JOURNAL.

FORMERLY THE PACIFIC COAST BULLION.

VOL. XVI., No. 2

LOS ANGELES, CAL., OCTOBER 15, 1896

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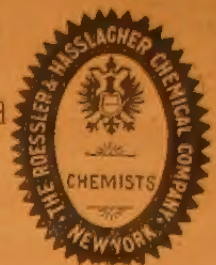
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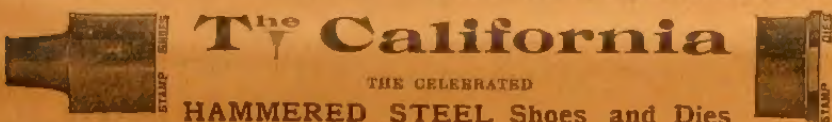
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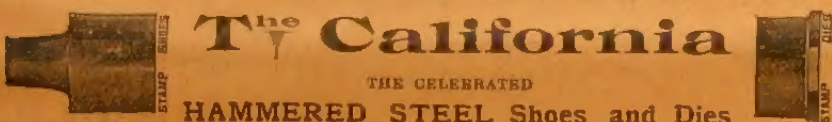
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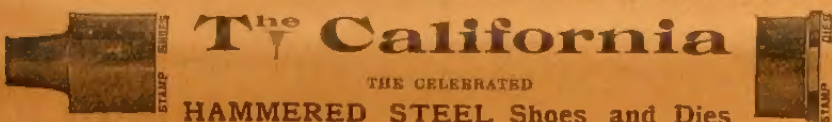
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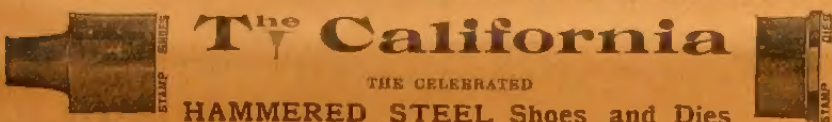
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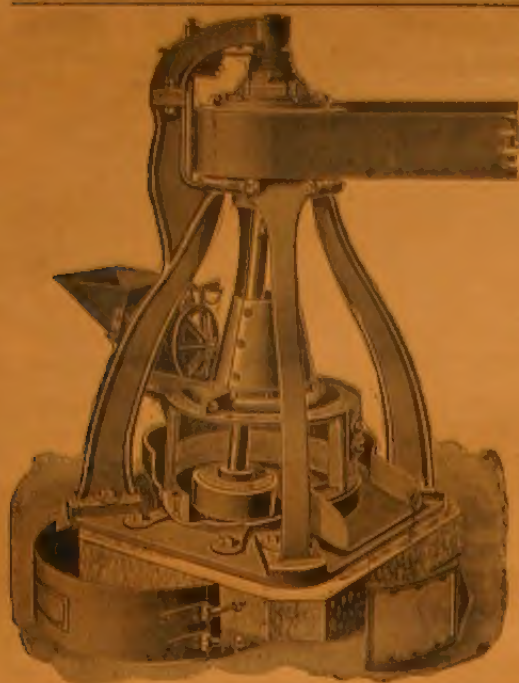
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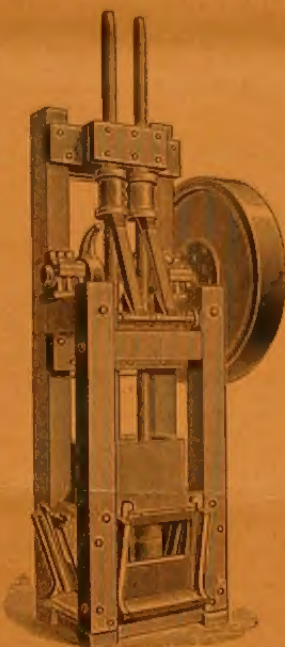
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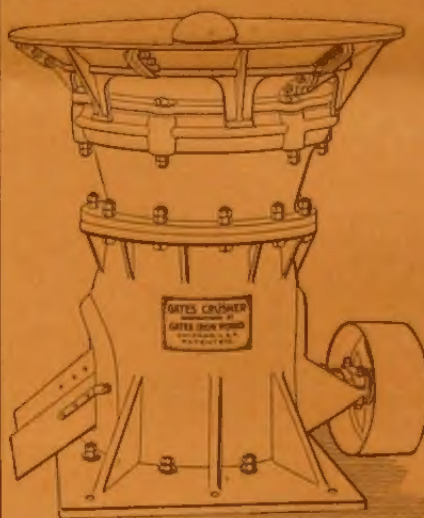
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IT IS A PITY.

How unfortunate it is that the elements opposed to goldism manifest any appearance of factionism. This is a time and we are in the presence of an issue that demands unity of purpose and effort, a spirit of self-sacrifice and conciliation. It is only in this way that any great cause has been advanced to success. It is a singular fact, one inexplicable on any rational theory, that a good cause has its traitors, but a bad cause never. Men should understand that they cannot always get all they want, and that they should be content with substantial gain. It has taken centuries to produce the civilization of the present day, and many more centuries will elapse before the hope of the optimist will be realized as to the further elevation of the human race. Be content to accomplish something this year, and each succeeding year while life lasts.

### THE LINES OF THE CONTEST.

There never was a reform that was not resisted which in any manner interfered with special privileges or advantages which one class had over another, advantages not naturally created, but which resulted from favoritism of government, or gained through the introduction of methods deleterious to the mass of the people.

The proposition to revise our financial system, so that the few shall not have a grinding power over the many, is met with the same resistance that has been experienced in other cases where reform has been suggested and efforts put forth to accomplish it.

The doctrine of bimetalism, or coinage and use of the two metals as money, is combatted by those who possess the one, because an enlargement of the volume of primary or redemption money will impair, if not destroy, the advantage the gold holders have over the masses of the people. This is the very gist of the contest, one side fighting to preserve its advantage, and the other to be relieved from exorbitance, if not positive oppression.

Another line of the conflict is sectionalism

not on account of geographical location, but between classes whose reliance is on different sources of sustenance and profit. It is not that different things are produced in the sections at variance, but because one section produces and the other absorbs, through a vicious system of finance. The contest is therefore between the people who have capital, and subsist and grow rich on its earnings, and the people who produce to supply the needs of life, the wealth of the nation, those who produce the wealth, receive the smaller per centage and the money lenders the larger.

The late elections show that the contest in a sense is sectional, and actually between producers and money lenders. Vermont, Maine, and so far as local manifestations indicate, Connecticut sustain the gold power, while Alabama, Arkansas, Florida and Georgia, producing states, sustain the principle of bimetallism. New England, New York, New Jersey, and Pennsylvania are capitalistic states, while the south and west are producing sections. The latter possess the larger political power, and, if united, can control the government in every branch—whether they will do so or not is yet to be determined. The real question is, can the masses be so corrupted by money, or misled by sophistry, that they will vote against their true interests?

The slave power was accustomed to charge that the Republican was a sectional party, when its exactions and superciliousness forced resistance. It was that power that demanded special advantages and privileges. So it is today with the money power, for, by its exactions, superciliousness and selfishness, it is forcing a sectional conflict. Were its maw less insatiable, were it disposed to live and let live, there would be no conflict in politics between the northeast and the south and west. The contest is provoked by those who make the charge of sectionalism against their opponents. Consent on their part to a return to the policy of the founders and early administrators of the government would be just to every section, and would avoid the appearance and unpleasantness of sectional controversy. The money power will have to yield sooner or later or the people will become so demoralized as to be unfit for self-government.

## STILL MAKING THREATS

A great deal is said by the goldites about revolution and anarchy, in connection with the advocacy of free silver coinage. They pretend that if the double standard is adopted, gold will go to a premium, and where gold contracts have been made, creditors will force debtors to pay two dollars in silver instead of one in gold. This is done to frighten debtors and others who believe that the larger the volume the easier it will be to get the money with which to pay debts, not because the money would be his, safe and sound, for whatever will pay debt by compulsion of law is sound money. Scarcity, which enhances the purchasing power of money, does not constitute a test of quality; nor does adequacy of volume tend to establish the unsound character of money. The threat is made that the possessors of gold will make conditions harder for debtors unless goldism is maintained. With the single standard, conditions are hard enough already. The threat implies that these patriots will disparage the money of the realm, unless they are protected in their advantageous position.

To counterfeit the coins or the paper money authorized by law is by law denounced as a crime, for which offenders may be severely

punished. It is also an offense to debase the money authorized by law. Why is it not as immoral and criminal to disparage any kind of money authorized by the government, to the injury of the masses of the people, by deranging business, through destroying what the law declares to be good money? The goldites prate about confidence, as if it cannot exist unless money is so limited in volume that it possesses an extortionate purchasing and earning power. Some regard should be shown towards other classes of the people than the gold monopolizers, who are few in numbers while the others are many.

It is the duty of government to ameliorate the condition and elevate the many rather than the few. Such is the great end to be attained under free institutions.

The American people will bear a good deal, but if conditions are made harder than they now are for debtors and working people, is there not reason to fear that relief will be sought through another agency than that of the ballot. The double standard existed for the first eighty years of our national existence, and its re-adoption now is not a new thing, and it certainly cannot be deemed revolutionary. Do the goldites mean that they will revolutionize, if their theories are not respected by the people in political action? They very nearly intimate that such will be the case. That is just what the slave oligarchy did; but there is no terror in their threats, for members of a gold, or any other trust or monopoly never did fight for their country, and it is doubtful if they will fight for their gold bags. They will have to submit to whatever is decided upon by the people, and it is best for them to do it complaisantly. Whoever is chosen to office constitutionally and fairly must be submitted to. The American doctrine is submission to the expressed will of the majority, anything else is revolutionary and anarchical.

IT IS BEST AS IT IS.

Complaint is often made of the frequency of our elections. It is true that when the American people are engaged in politics, there is a falling off in business, and for two or three months of a presidential year there is almost a cessation, except as to that which is necessary to enable people to live. When questions are involved which relate to industries, commerce and finance, there is doubt which causes men to halt until the result is known. If such conditions could be avoided, it would be well; but it is impossible. There will always be differences of opinion on every important issue that arises.

It would be the worst of evils for the American people to disregard politics, or to have elections so infrequent that bad policies could not be corrected without protracted delay. Who would be glad to have Grover Cleveland remain power beyond the 4th of March next? Paralysis of business to any extent for a few months is a trifle as compared with a longer term for such a chief executive. To have elections at the end of long periods would probably cause the masses to lose interest in public affairs. They are too listless and neglectful as it is. Those who aspire to the possession of special privileges are always awake and alert. They would be ready for action however far apart elections might be, while the masses, whose time is taken up in earning a livelihood, would be without preparation to protect their interests. Political campaigns are educational, and let them be so frequent that the people can keep a hand in the work.



## THE PROCESS OF ENLIGHTENMENT.

In the course of our political history, numerous and grave questions from time to time have been discussed before the people. They have been called upon to express their will upon questions which in other countries are passed upon only by the learned class. In other than popular governments, the masses are deemed incapable of forming intelligent opinions on important matters of government.

The American people have expressed their views at the ballot box on constitutional and international questions, on the tariff, on commercial affairs, war, and slavery, and differences between political parties on these subjects have been settled by the people themselves. All our political campaigns national and state, have been characterized by methods tending to develop the intelligence of the masses, and results vindicate the correctness of the theory that the people are capable of securing good government for themselves.

It is a singular fact that the financial or money question heretofore has been least discussed, and upon that subject the people have taken less pains to inform themselves than upon any other. It is true that twice the subject of a national bank was in issue, but it presented but a single phase of the financial question. Everything has been done in money legislation without consulting public sentiment or appeal to the popular judgment. Evidently, our legislators and statesmen have not thought it to be necessary to have the questions involved publicly discussed, and the people have acted as if they were willing to let financial policies be prescribed by those whose business it is to make a study of them.

The present campaign is the first in which the money question has been put forward as paramount to all others, and it is discussed on a broader scale than ever before. The people for the first time take a deep interest in it. Their judgment will be final, and whether the finality will be reached this year or not, it will be in the near future. The trouble in the past has been that policies have been adopted through the exertions of interested parties. When the people have made their final expression, broader and better policies will prevail. Popular opinion does not recognize class interests. The discussion of the money question this year is worth everything to the country. Now that the people are aroused upon it, they are not likely to lose interest until the question is settled finally and satisfactorily.

It is, undoubtedly a surprise and a pain to the financial wisecracks to see the amount of popular intelligence that has been developed, and the great number of men who are able to give facts and figures, historical data, and profoundly argue upon the supposed mysterious and abstruse money question. The great orators are not the men who will control popular action, but the laborers and men in humble spheres. God indeed raises up the weak to confound the mighty. Goldism is destined to go down under the uplifted hammers of the working men.

## A CALIFORNIAN PECULIARITY.

Perhaps it is wrong to criticize what we shall speak of, as the title to this article indicates: We put it that way because we have a better knowledge of practices here than elsewhere. For aught we know, they may prevail all over the nation, but doubt if they do to the same extent as here, we have reference to the frequent formation of corporations to carry on this or that kind of business, or to engage in every conceivable

enterprise. We doubt if in more than one in ten cases anything results after the filing of articles and obtaining a certificate of incorporation. It has nearly come to this that almost everything is proposed to be done through corporations. People reading that a great scheme is on foot to develop the country, or make great improvements for the benefit of commerce or agriculture, through a corporation just formed, are liable to have florid expectations, which are not realized. The practice has prevailed so long without beneficial result in but few instances that it has become tame and stale.

In most cases, corporations are formed by men without capital, and in the hope that moneyed men can be induced to invest in them, and as a rule such hope is blasted. Persons engaged in such schemes had better devote their energies individually to something practical, to that which they can do and will be of value to themselves. It would be best for them and for the country. Better results are obtained as a rule through individual than through corporate effort.

## THE MARKET FOR SILVER.

The chief reason given against the free coinage of silver is that it would stimulate the industry of silver mining, so that there would be an over-production of it, and that it would force gold, the dearer or scarcer metal of the two, out of the market. The present production of silver of the world is about \$226,000,000, and even if that amount was doubled, or \$500,000,000, (which amount is impossible) it would not result in an over-production of silver. The peoples of the Orient, Japan, China and India alone can absorb almost all the silver now produced, and when we consider the future requirements of Africa, we have there a large market of as yet unknown extent. The population of the world is about 1,555,000,000 of people, and when \$226,000,000 of silver comes to be divided up as coin, and in the arts, there is not enough produced yearly to satisfy the demands for coin and the amount yearly absorbed in the arts.

The eastern and semi-civilized people hoard coin and the European and American people use it for money of small value, as gold is impracticable for such use and paper is dirty, unhealthy and inconvenient for small change. Its large use in the arts, for articles of personal and household utility, absorbs annually a large amount in civilized countries. As coin and in the arts, its uses are such that the supply does not now meet the demand. Prior to 1873, England had to buy our silver coin at face value, with 3 per cent premium added.

To gain control of the silver market of the world, and increase the value of the hoarded gold of Europe, the money lenders got the single gold standard adopted. When silver, in the form of bars, and not at coin value, could be purchased, and its price controlled by England, the point of advantage was gained. With a foreign trade and banking system reaching to all parts of the world, England has for over twenty years gained control of the silver trade and shipping between the American silver-producing countries on the one hand, and the silver-purchasing countries of Europe and Asia on the other. Free coinage of silver will divert this trade to the United States, and take it and the profits from England.

The uses of both gold and silver are so general and established among all nations of the world that there is no possibility of a suc-

cessful system of monometallism of either of the metals. Gold is used for coins of high values and silver for those of lower values, consequently, we require a much larger amount of the latter, as it is the money of the masses.

The British manufacturers and shippers do not want to see McKinley elected, and the bankers and money-lenders do not want to see Bryan elected, and, as a consequence, there is more interest taken in American politics this year than in any other election. These political straws point the direction in which the trade and financial wind is blowing, and the necessity of protecting silver as well as other American industries already protected.

## HOW FREE SILVER COINAGE WOULD AID THE SOUTHWEST.

The more intelligent a people are, the larger does their volume of currency require to be. The people of the southwest require free silver coinage to increase our currency, and liberate our financial policy from paying tribute to Britain in gold alone, by paying silver coin. This is a form of protecting American silver that our so-called protectionist Republican manufacturers and money lenders do not like. They want protection for all industries except silver, like the Scotch fisherman, who wanted free trade in all things except herrings. The free coinage of silver would increase our shipping interests in wheat and flour and manufactures to China, Japan, and South America, and our ores and mineral products to Europe. Our foreign trade with Mexico and other free silver coinage countries would be increased. We would be benefited by the increased demand for the products of our foundries, machine shops and manufactories of supplies for railways, mines and smelters at home and abroad. Our agricultural, fruit and wine industries would have a larger home demand, and the wheat market and price would be advanced by increased export to silver countries, and in creating a demand for food products as luxuries and beverages, wines and beer, at home and abroad. With no employment, our miners cannot buy these products, which are always paid for in silver. An era of industrial development would result with the building of new railways through our rich mining and irrigation districts, on the lines to Salt Lake coal fields, and give us cheap coal, and make California's large iron resources a benefit to the whole state. Roads and railways would have to be built to abandoned and new mining camps in desert and mountain sections.

The æsthetic editor, who detests all questions in the interests of labor, except the dignified position of driving a gold-pen editorial advocating Anglomaniæ, detests the idea of free silver coinage, as it would benefit labor, by the increase in mining, railways, building, manufacturing of all kinds, especially chemicals, also to irrigation and water development, agriculture and stock raising in new districts. It would open new and old mines of low grade ores of gold, silver, copper, lead and zinc, not worked at present.

So intimately are the interests of gold and silver linked together in nature and in the industries, and also in their use as coin that they demand equal facilities for coinage to maintain their respective values.

As California ledge and placer gold is alloyed with silver, free coinage of silver would give that silver coin value, and, in consequence, our gold miners demand an equal treatment at the mints for each metal. The



ratio has been already fixed by the chief nations of the world, viz.: England, Germany and United States at a ratio of 16 ounces of silver to 1 of gold. The chief obstacle in the way of preventing the emancipation of silver is the purchasing power of the hoarded gold of Europe, which can turn, purchase or buy American patriotism or political influence to work against the interests of our second largest metallic mineral industry, and aid the interests of the foreign money-lending power.

#### OUR FOREIGN TRADE.

The displacement of British goods by articles of American manufacture is now the cause of deep concern among British manufacturers, both in the home market and abroad. As a result of this, the governor of Hong-kong, having appointed a committee, in response to Mr. Chamberlain's circular to all colonial governors, to inquire what, if any displacement of British goods has taken place in that market, a report has now been issued in which the committee state that it is apparent, from the evidence, that the displacement of British goods has been going on steadily for some years. The causes to which the displacement of British goods is to be assigned are stated thus by the committee:—(1) lower cost of production of rival foreign goods; (2) disinclination of British manufacturers to study taste of consumers; (3) THE STEADILY FALLING VALUE OF SILVER SINCE 1873; (4) lower freights outwards from foreign, as compared with British ports; (5) cheaper railway transit to foreign ports of shipment. Here is official proof that the free coinage of silver by the United States will increase our foreign trade and exports to the Orient and to Europe and stimulate our industrial development as much as an increase of the tariff on imports can do. Our silver export industry and our exports of manufactured goods are the products of American labor, and the trade in both ought to be conducted by our own people, and not controlled by England as our silver industry now is. The free coinage of silver will help the export trade of the eastern manufacturers, as well of the interests of the west, by taking our silver trade with the east out of the hands of England.

Messrs. Wade & Wade, the analytical chemists and assayers of this city, have moved from 109½ Commercial street to 115½ North Main street, the old quarters being insufficient to accommodate their increasing business. Their offices now occupy seven large rooms. New machinery has been put in, and assays or any other chemical determinations can be made on shorter notice than ever. They will have one of the best laboratories in Southern California.

Bulletin, No. 9, of the California State Mining Bureau has been received by the MINING AND METALLURGICAL JOURNAL. It is a treatise on mine Drainage, Pumps, etc., by Hans C. Behr, mechanical engineer. Any citizen of California "may obtain a copy free," by sending five cents (for postage) with their application, to the California State Mining Bureau, No. 24 Fourth St., San Francisco.

The Standard Mining Company of Bodie will, in the near future, sink the Bodie shaft 2,000 feet more, increase their mill to 100 stamps and move their electric plant to Walker river for more power.

#### KELLER'S NEW IMPROVED FEED-WATER HEATER,

Purifier, Condenser, and Hot Air Blast Device Combined.

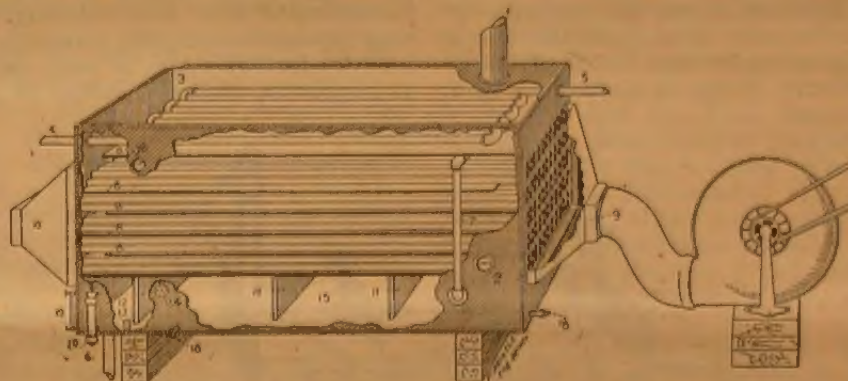
The Kellers device being constructed upon entirely new lines from that of all other hot water heaters and condensers, they wish to call the attention of all those interested in steam power to see whether their principle in device is not correct.

This is an age of improvement, development and progress. They have kept time with its advancement in the construction of this device.

It has been an invariable rule that from the inception and operation of the first feed-water heaters up to the present time, all have been built upon the same old identical lines; all accomplishing nearly the same results. The very best of them return the water to the boiler at only about 180 degrees of heat, and this, too, without separating either dirt or grease. How can they expect the impurities to precipitate when the water tanks in their devices hold so little water? If, as they all claim, they return the water to their boilers at boiling temperature, the water then in their tanks

one is shortened a little at opposite ends. Below this is the settling chamber which is the most important factor in any heater or purifier. This tank is built to stop all unnecessary outlay of money, and at the same time save the boiler. It is large enough, and so constructed that all impurities will lodge in it. It shows whether the impurities in the water settle, or go into the boiler.

The tank in an ordinary sized device, say 100-horse power, holds about 225 gallons of water. It is divided by three vertical plates, and one narrow plate. As the exhaust comes in the upper chamber it passes over the superheating pipes, then down into the next chamber, around down from one to the other and out at a vent. The steam being turned so often by the "baffle plates," heats the water in the feed-water pipes to a boiling temperature, and heats the tubes to a very high degree also. Through the medium of the fan a blast of air is forced through, and out of the tubes. This air and other agencies condenses the steam. Both condensed and "feed-water" go in the settling chamber. Feed-water is let down in the pipe at end opposite to that where the pump takes it. As the water line is above

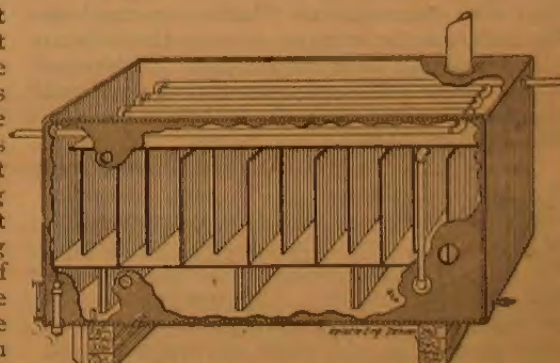


Two Hundred Degrees More of Heat Returned by this "Device" than by any Feed-Water Heater Ever Constructed.

must be of the same degree of heat. The boiling water coming in continually keeps it in constant agitation, so that the impurities cannot precipitate, the construction of their devices being such that they cannot remedy it. On the other hand, if the water is not brought to the boiling temperature when it goes in the settling chamber, the impurities will not lodge. Consequently, in either proposition the dirt will be found in the boiler in the way of scale and sediment as all engineers fully understand. If they are wrong in this proposition, why is it that there is such a traffic in compounds?

These factories are springing up all over the country, and we know their output goes exclusively to those having steam power whose feed-water heaters send all the dirt the water contained to the boilers. Careful examination of this new, improved device convinces one that there are no imperfect features. It has the endorsement of engineers and practical mechanics. Those who have it claim that it is the most perfect practical, and yet most simply-constructed device ever put on the market, and that it contains all the elements of a good heater. It will be noticed by the first cut that there are three chambers in its construction. The upper is where the exhaust enters. In this are a number of returning pipes called superheating pipes. The next chamber below is the hot air and condensing department. In this there are a number of tubes, the ends of which are expanded in the ends of the device. Lying on top of these are a few returning feed-water pipes. Between each two rows of tubes is a "baffle plate" each

the bottom of the first plate, it necessarily passes under it to get to the adjoining chamber; this operation quiets the water and cools it a few degrees. In this chamber the impurities have ample time to precipitate. All impurities which have not been deposited lodge in the next, and before they go into the pump chamber; the water is continually cooling and the oil has raised to the surface. The oil trap is perfect as can be readily seen, and the oil can be let out at an "overflow," when desired. The water going into this last, or pump chamber, has cooled down several more degrees so that almost any ordinary pump will handle it and force it through the superheating pipes, where the exhaust, with all its units of heat, comes directly upon and over them, thus raising the water to such a degree of heat that it goes to the boiler at boiling point. The tubes are heated up to such a high degree of heat



Feed-Water Heater, Purifier and Condenser.



by the action of the exhaust passing back and forth and over them, that the blast of air forced through comes out at an exit at about 180 degrees of heat. This dry, hot air is as valuable as the hot water going into the boiler. It is a part of the forces of the exhaust utilized; it can be used, not only under furnaces, but for drying lumber, fruit, or wool in factories, or meat in packing establishments; heating buildings, drying brick or terracotta, or for any purpose where hot air can be used. This device is almost indispensable where mining is carried on, if fuel and water are scarce, as it saves such a large per cent. in these two necessities. If the water is sent to the boilers at boiling point through this device and the hot air under the furnaces at 175 degrees of heat, we can leave it for the engineer to decide regarding its economy. It is very useful in underground workings where foul air is encountered, the fan attached to this device drawing out the impure air, while fresh air rushes in.

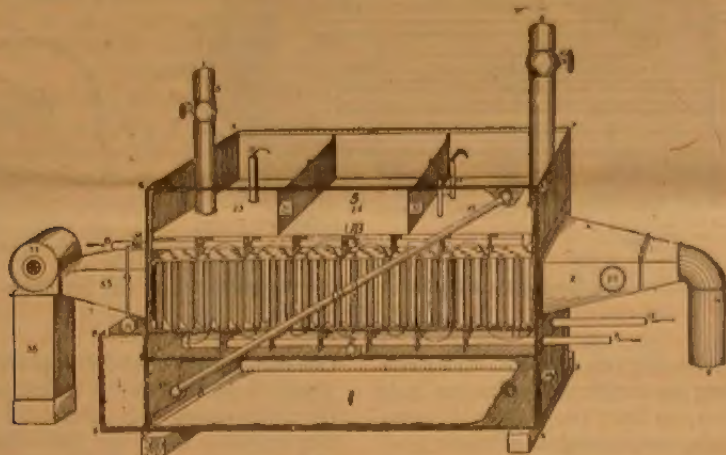
This device can easily be taken apart, repaired, and readjusted, the top plate being bolted on. The next plate beneath it rests on angle iron so that either the superheating pipes or feed-water pipes can be lifted out. Should a tube break it can be removed by taking out a few bolts which hold the hoods in place. In the tanks there are hand holes, and a "blow off." It can be cleaned out in a

retail, also manufacturers of fine interior house finish, office fixtures, stairs, mantels, cabinet work and general planing mill business. They are always on the lookout for, and ready to adopt any new device that will add to the efficiency of their plant. After a thorough investigation of Keller's Improved Device they put in one of medium size; the object in view being to dry lumber. Two months' trial resulted in their ordering a second one of double capacity which is now supplying hot air for their two dry kilns. They are now drying both hard and soft lumber in perfect shape. Their trade in hard wood lumber is steadily increasing as it becomes known that they now have hard wood lumber sufficiently kiln dried to stand in Colorado climate without either shrinking or warping. The Chicago Lumber Co. believe they have solved the problem at last of drying lumber thoroughly at the very lowest practical cost.

The exhaust steam which formerly went to waste is now utilized by this device. It not only furnishes the hot air but it also condenses the steam and returns it with the feed-water to the boilers continually at boiling point which thermometers show, thereby effecting a saving not only in fuel and water, but in "compounds" also, thus reducing their running expense account very materially. Parties interested where steam is used are welcome to inspect the Chicago Lumber Co. yards and

ature of the water going into the boilers, nor its condition, for the examination of the boilers and statements of reliable engineers, who had charge of some of these devices—the "back pressure" gauge and thermometer on the pipe through which the water is forced in the boilers being "his evidence." All these facts laid before the general superintendent, W. H. James, they ordered the device and gave it a most thorough test for several months before ordering the second. The device is now feeding two 100-horse power boilers. The water goes in the boilers, constantly at 200 degree which is boiling temperature at Denver altitude. The hot air in summer they utilize under the furnaces; in cold weather it will be carried to the crushers, which will prevent the dirt from adhering to them and often double the amount of their work. They will also use the air for heating their buildings. In the language of Mr. J. C. Hoddock the engineer who has charge of the engines and this device: "It is the best compounder I ever saw, my boilers are in splendid shape and I want no 'compounds' so long as this Heater feeds the boilers." The second device furnished them is condensing the steam from these two immense engines and feeding the boilers and the hot air utilized under the furnaces.

These devices are made by the Star Boiler and Sheet Iron Works of Denver, Colo., known by all boiler and sheet steel manufacturers to be the best equipped and one of the most reliable institutions west of Chicago. They make these devices of the best of heavy sheet steel, and of any size required.



The First Feed-Water Heater J. M. Keller made and sold.

few minutes and not interfere with the running of the machinery. It is of such capacity that it does not require attention oftener than the cleaning of boilers. It is supplied with a perfect automatic feed-water cut off, also water gauge. This device is so nearly automatic in all its processes, that it is worked by less than 2 per cent. of the energy usually expended, while it saves to the user from 30 to 40 per cent. of the same. Its superiority is shown in the complete condensation of all the exhaust, and the purity with which it sends back the water to the boiler, which the manufacturers guarantee will be at the boiling point. They also guarantee no "back pressure" in this device as the exhaust is more than maintained throughout its construction. The ease and economy with which the connections and attachments are made make it the most desirable of all its kind.

One of Keller's Feed-Water Heaters and Hot Air Blast Devices can be seen in operation at the factory of the Chicago Lumber Co., Denver, Colo., corner Bassett and 15th Streets. The exhaust is now utilized through this device in drying lumber. This company is well known to every one in the western country as large dealers in all kinds of lumber, lath, shingles and building materials, wholesale and

see their system of drying lumber by this improved device. The water used in these boilers is from a four hundred foot well. It shows by an analysis that it contains considerable sulphates, chlorides and carbonates associated with much soda, magnesia and potash. But with all these chemical impurities in the water, Mr. Miller, the engineer, says: "the boilers are in such splendid shape that he needs no more compounds."

The Omaha and Grant Smelting Company now have two of the Keller Heaters at work in their immense establishment, these smelting works are well known for their size, extent and structural features, but their success is attributable for the possession of the most modern machinery that skillful mechanics can select and money will buy. The quantity of coal they consume to keep this machinery in operation is a great expense. In order to lessen this item it was necessary to procure a "Feed-Water Heater" that not only would supply the boilers with water at the boiling temperature but return it in such condition that the item "compound," would not show on their books. Their Mr. Kelsey, superintendent of the machinery department examined some of the Keller devices at work. He asked no questions regarding the temper-

## CORRESPONDENCE

### CALIFORNIA.

YUMA, ARIZ., Oct. 6, '96.

EDITOR JOURNAL:—The rich strike made in the Golden D. K., Little Frank and Noonday mines last week proves to be the most important ever made at Picacho or along the Colorado river. The veins of ore are from 8 to 25 feet wide—of ore that is free milling, and will pay from \$5 to \$10 per ton in the mill. The three rich pay streaks discovered are from two to three feet wide, carrying free milling ores that will run \$100 and upwards per ton. One of the veins of the Noonday is from 7 to 32 feet wide, the other 71 feet wide, with but one wall in sight. The Little Frank has been cross cut at 38 feet in depth for 46 feet, all in good pay ore. No walls in sight. The Golden Dream, cross cut at the same depth, for 44 feet, shows no walls, all good pay ore. The Golden D. K. is from 25 to 50 feet in width. Ore pays from the grass roots down. The Blue Lead is down 25 feet, showing a vein of pay ore 50 feet wide. The Emerald, 20 feet, shows good ore from the top, vein 60 feet wide. These are only a few of the mines now being worked in the White Gold Basin, at Picacho, where 25 men are steadily employed. XXX.

PANAMINT, INYO COUNTY, CAL.

Oct. 3, '96.

EDITOR JOURNAL:—Few people in Los Angeles are aware that there is being quietly developed and prospected in the southwest corner of Inyo county a mining camp that has some similar features to the great Mercur camp of Utah. In 1870, Senators Jones and Stewart spent large sums of money developing and equipping some silver mines on the west side of the Telescope or Panamint mountains. Owing to the long Overland freight



haul from San Pedro, 250 miles, and the generally low values of the ores, after a few years of indifferent success, the mines were closed down. In 1893 placer gold was discovered at Goler, followed by the discovery of the great mines of Randsburg. Since then there have been hundreds of men carefully searching the desert over for the yellow metal with such success that what was once known as the desert is now teeming with life, plenty of water being found wherever it has been required. The Panamint or Telescope range of mountains is east of Mojave 105 miles. Telescope peak has a height of nearly 11,000 feet above sea level. The surrounding country is well timbered and watered, for the desert, with good roads.

The old silver camp of Panamint was in a belt of lime and granite. Below this belt, the formation is slate-porphery, mica-schist, lime and granite. In this belt has been discovered up to the present time three belts or zones of gold-bearing quartz formations. The two upper belts have strong fissure veins, one mine (the Golden West), in the middle zone, being down over 200 feet, with three feet of ore, that is said to mill over \$40 per ton free gold. On the upper belt or zone is the Cole and Montgomery group of claims. These veins are strong fissures, some of the veins averaging over twenty feet in thickness, with an average assay value of \$24 per ton. On the lower belt or zone, near the foot of the range, is a belt or zone of porphery, quartz and mica schist. In this schist belt is the great vein system, similar to the Mercur mines of Utah. Beginning at the south side of Pleasant canon, and extending south about eight miles, this vein system shows five prominent croppings. Two of these croppings, the Friday group; and the Mineral Hill group, show immense bodies of free milling ore. On the Friday group the vein outcrops for 7000 feet, with an average assay value of \$20 per ton. About two miles south of the Friday mine is the Cass mine. This mine shows an immense body of ore, but being one of the latest discoveries, the true value is unknown.

About three miles south of the Cass mine is the Mineral Hill mine, probably the best poor man's mine on the desert. Here they have a solid cropping of quartz, 1350 feet in length and 200 feet wide, cut by a gulch on the west end 100 feet deep. In this mass of ore there are rich streaks, from a few inches to three feet in width, that will average over \$100 per ton, while 500 feet of the east end of this outcrop or deposit will average \$19 per ton. The west end has not been thoroughly sampled yet, but is expected to run about \$8 per ton. This claim was discovered June 9, 1896. As this claim is the oldest location on this belt, with the exception of the Friday mine, which was located in March, 1896, the future of this great west lode is hard to foretell.

About three-quarters of a mile from the Mineral Hill mine is the E. E. Montgomery mine, there has been discovered another vein, said to rival the Mineral Hill in size and richness. On the Mineral Hill alone it is estimated there has been blocked out by nature enough pay ore to keep a ten-stamp mill crushing twenty tons per day busy for 150 years. As at least three of these deposits are as large as the Mineral Hill, if the values are there as it appears, you will hear in the future of the New South Park district as a gold producer. Along the course of these mineral belts or zones there has been located a great many smaller veins. Some of these are very rich. The general outlook for the future is

flattering. Experienced and well-known mining men are turning their attention to the new camp. If the original discoverers will put reasonable prices on their prospects, this camp should succeed, as Randsburg and the other desert camps have opened the way, so the new camp will probably attract the attention of the wealthy and more conservative mining men. ONE WHO KNOWS.

JULIAN, Oct. 5, 1896.

EDITOR JOURNAL:—The Owens Mining Company have started up in first-class style, having two Johnston concentrators just recently put to work, one for each battery, also an assayer. The mill will be kept constantly to work day and night. The main shaft is down about 350 feet in depth, with levels run from the bottom of the main shaft 200 feet each way on the vein, in good ore all the way for 410 feet in length.

The King and Queen mine is sending their ore to the mill in Banner to have it milled.

The Golden Shamrock has had another mill run, crushing ore that milled \$50 per ton.

The Chapparal boys have 50 tons of very good ore, ready to haul to mill to have it crushed.

The North Star Mining Company are putting up a whip to work their mine with.

Mr. Coutts is having a place excavated for his mill on the Ranchita mine, also sinking for water up in a canon, some 400 yards south of the mine.

J. Green Jones is running a tunnel on the course of his vein.

Judge George is sinking a shaft on his Mascot mine.

Gus Daggutt is taking out ore from his San Felipe claim.

The Bailey Brothers have run a level 130 feet in length, from the bottom of the Redman mine, good rich ore all the way.

OBSERVER.

#### COLORADO.

BOULDER, Colo., Oct. 3. (Special.)

EDITOR JOURNAL:—The Marshall Chemical Electric process will be in full blast by the first of the week. The machinery, settling vats, rolls of different sizes, chemical tanks, the electro-magnetic separation of the precious metals, storage battery, refining tanks and other sections for mechanical operations are all in place ready for the engineer to set in motion and send the wheels whirling.

Everything about the mill or process works is automatic, and from the time the mineralized matter enters the huge crusher until it is received in the refining room, the machinery does the work.

The bins of the mill are filled with ore, and fully three tons are now on hand waiting for the new process to treat. Prof. Marshall says he can treat ore successfully for \$3 per ton, and will take ore that contains \$10 in gold for treatment. Further information will be given after the mill or process starts.

The Nellie Bly bromine process of Messrs. Cassell and Hinman at Magnolia treats most successfully the ore from the company's mine, the Keystone. The mineral is a telluride of every grade from \$10 per pound to \$10 per ton, the former in limited quantities, while there is great abundance of the latter class. This stuff is treated by the bromine process at a cost not to exceed \$1.75 per ton actual cost to the company. The capacity of the process is said to be 50 tons daily, but it does

not treat over 40 tons in twenty-four hours, yet the inventor claims a saving of 95 per cent of the gold and silver contained in the rock of the fire assay.

The Nellie Bly company is developing two properties, the Keystone and Kekionga mines, both telluride veins of good size, carrying high minerals and large amounts of milling stuff.

The Teagarden chemical process is also at Magnolia, about one and a half miles from the Nellie Bly. This plant is owned by the Chicago-Buckeye companies, but has not been in active operation for the present year. It is claimed by John H. Teagarden, the inventor, that ore can be treated successfully by this process for 75c per ton, and at a saving of 95 per cent of the assay value. Reasons given for not running such a valuable process are the companies' properties are not sufficiently developed and ore bodies opened to supply 50 tons of ore per day, and as the process does not do as well when run a portion of the time, therefore it was decided to close the mill for the present and develop the mines.

A new mill has recently been built at Summerville for the Scotia mine, owned by Cameron & Co., of Denver, Colo. The process is a combination of electrical concentration, in which an electric current is used in settling slimes and fine gold, which would otherwise be carried over the Frue vanners by the amount of water used in concentrating the mineral. The mill is doing good work and treats the ore successfully. The mine is a telluride lode of low grade stuff, which is treated by concentration entirely, there being no copper amalgamated plates used to catch the free gold found in the ore, the electric current doing the settling process. Large vats are used, into which the pulp or light slimes are conveyed, and from this stuff all the float gold is collected and saved.

The Victoria mine is situated at Summerville, and is being operated by Charley Davis. It is a silver which produces a high grade of steel grain lead ore, zinc blend and iron pyrites, the latter mineral carrying about one and a half ounces gold per ton. The first-class ore from this property runs from \$300 to \$500 a ton, and is a very valuable mineral for flux, therefore the owner gets better rates for smelting.

A. D. Alkire, superintendent of the Loveland mine on Left Hand, brought to the smelting works, this city, yesterday, two test samples of ore recently taken out of the property for the purpose of ascertaining, if possible, the relative values of the two grades. Lot 1, 442 pounds of second quality mineral, gave gold 8.25 ounces, silver 4.75 ounces a ton. Lot 2, 58 pounds, yielded 122.65 ounces gold, 24.85 ounces silver, value \$2335.45 per ton. The ore is a telluride, carrying a high percentage of rusty gold, which is peculiar to Boulder county, and not generally known to mining men who have not operated here, or examined the numerous grades and classes of the telluride ores of Boulder county. Mr. Alkire was very much elated over the results obtained, and says the Loveland mine has lots of such mineral exposed which will be stoped out.

A few lots of rich ore have been brought down from the Golden Age mine, Jamestown, which ran from \$20 to \$30 per pound. John Rose and Son sold fifty pounds of ore that brought them over \$20 per pound, beside the lower grades of mineral found in the lease.

John Johns and Son panned out of 10 pounds of gold over \$200 in gold, while Gaff Evans sold 8 pounds of stuff for which he re-



ceived \$165.75. These men lease pieces of ground in the Golden Age mine and are only a portion of 50 working the property. Other men ship at different times ore that runs equally high in gold. It is wonderful property, and has made many poor miners possessors of large bank accounts.

A new discovery was made last week near Sunshine by Frank Mildren from which was taken decomposed quartz, sylvanite and free gold that sold for \$60 per pound. The vein of this rich stuff is said to be three inches thick, while the lode between walls is three feet wide. Frank has named his discovery the Dixey lode and claims he makes \$60 per day right along from sinking the discovery hole or shaft. Mining on the Dixey mine must be profitable business.

"BOULDER."

#### NEVADA.

CRESCENT CAMP, NEV., Oct. 3, '96.

EDITOR JOURNAL:—The threatened hoarding of gold has not as yet seriously crippled the mining industry on this part of the desert. Prospectors, who have been compelled to hunt for wages, are now fast returning to complete their assessments for this year.

Geo. Simmons is busy opening up his extensive property in South Crescent, where he has some fine bodies of high grade gold ore.

Alva Phelps is again in camp, looking over his claims and preparing to build an arrastra to test his ore.

The arrastra seems to have become quite popular recently in this district, and several miners are engaged in reducing their ore by that crude and slow method, and thereby save freight, charges, and the expense consequent on reduction, and the result has proven the wisdom of their judgment, for all are at least making a living, while the high charges for transportation, by wagon and R. R., almost preclude the possibility of the miner keeping his cabin stocked with grub.

The death of W. S. Mills, the aged superintendent of the South Western Mining Company, at El Dorado canon, has again caused a shut down of that company's extensive property.

Steers & McNider are still at work opening up their many claims, and have several dumps of fine gold ore ready for the reduction plant.

J. Ryan, an Idaho miner, has arrived in camp, and has concluded to stop and do some extensive prospecting. As he is an old and experienced miner, it is to be hoped that he may find something that will reward him for his labor.

H. M. S.

### Miscellaneous Mining News.

#### ARIZONA.

A letter received at Solomonville, Arizona, from a gentleman in Philadelphia, making inquiries about a location for a copper smelter in that vicinity, and the opportunity for securing mines or ore sufficient to supply a smelter at that point, tends to give the impression that Solomonville is likely to have a smelter located there in the near future.

All data possible was obtained concerning the copper mines in the Lone Star District, about twelve miles north of that place, and forwarded to the Philadelphia gentleman, who, it is hoped, will be induced to visit Solomonville, and make an examination of the existing conditions there for such an enterprise.

There are a number of copper prospects in

the Lone Star district, which it has always been claimed would supply a smelter located near there on the river with an abundance of desirable ore. Some of the prospects have been developed to a depth of one hundred feet and some high grade ore has been taken and shipped.

High wagon freights have in the past retarded the development of the Lone Star district, but now, with a railroad within twelve miles, it is believed that the mines there afford a splendid opportunity to those who may desire to engage in the copper industry.

(Extracts from the Graham County Bulletin.)

#### MORENCI NOTES.

Mr. Wm. Church, the contracting spirit of the Detroit Mining Company, has been at Morenci for nine months, personally supervising the many improvements and additions to his great enterprise. It was he who first purchased the mines now owned and operated by his company. Mr. Church is a man of unlimited energy and deserves the success he has attained at Morenci, and the prosperity which is now assured for the future.

Walter L. Bell has received a just promotion recently from the Detroit Mining Company, whom he has served faithfully so long. He was formerly foreman in the concentrator, but now has entire charge of every department connected with the reduction works. This plant has enlarged greatly during the past year, and what is known as the Bessemer converter process has been added to it. By this process a very low grade of ore can be successfully and profitably worked. The company is now turning out about twenty tons of copper per day.

Gordon McLean still has charge of all the mines worked by the Detroit Mining Company and reports plenty of desirable ore in sight. Gordon is one of the best mining men in the territory and has been with this company almost continually for twelve years.

#### AT CLIFTON.

The Arizona Copper Company is now smelting and shipping more copper and matte than ever before. There has been wonderful improvement in every department of the work within the past year. An immense new concentrator has been added, the leaching plant continues to be a complete success, and it is reported that in the near future a converter plant will be added, by which the low grade matte will be converted into pure copper on the spot.

Supt. James Colquhoun is still in Scotland, where he went three months ago with his family. He is expected to return during the next thirty days. During his absence the great enterprise moves without hitch or hindrance under the management of J. G. Hopkins, secretary and cashier of the company, assisted by the various heads of the several departments.

#### METCALF NOTES.

Charles M. Shannon is still working the Hughes & Shannon mine. Mr. Nichols is the superintendent, and about thirty-five men are employed. This mine is one of the most valuable in that section. The ore is of good grade and easy melting.

The past week was a little quiet in mining circles in Jerome. Interest is centered in the parties who have bonded the Hull-Wingham properties, it is thought, will insure the bonding of a number of other groups in this district. At the St. Peter-Martin group

work still continues with good results, and the fine showing of mineral in this group as work proceeds is very encouraging to its owners.

E. V. B. Hoes has deeded a number of mining claims to the Treasure Mountain Mining Company. The claims are located between the Last Chance mine and Granite mountain, near Prescott.

Machinery for the Planet Saturn Company has commenced to arrive at Pool's gulch, near Prescott. They have contracted for the transportation of 300,000 pounds of machinery, in addition to a large amount of brick and lumber. This camp is forging ahead in great shape, under the supervision of W. A. Clark, its efficient superintendent.

Since commencing work on the Gold Note and Surprise mines, near Prescott, D. B. Gillet has had 1305 feet of development work done on the two claims, in sinking and drifting. All the work is 6½x4 feet in the clear. In addition to this development work in the mines, considerable work in the way of improvements has been done on the outside. Both properties are looking well.

#### Arizona Sampling Works.

The following ore lots were received at the above works last week in September, as reported by the *Mohave County Miner*:

Frank L. Smith, one small lot.

Frank Dewey, one lot from White Hills.

William Koshland, Signal, one small lot from Rawhide.

C. E. Sherman, Mineral Park, one ton.

Ole Ingelbretzen, two lots, Todd Basin.

S. P. Thompson, two lots from Prince Albert.

T. L. Ayres, one carload screenings.

Fisher & Dundon, twenty-four tons from Oro Plata.

C. O. D. mine, three tons concentrates.

D. W. Earle & Co., small lot from Manvel. Shipped two carloads to Pueblo.

Dundon & Fisher had twenty-four tons of Oro Plata ore worked at the Kingman sampler a few weeks ago that gave them a good sized roll of money. The ore sampled 430 ounces gold and 31 ounces silver per ton. Messrs. Dundon & Fisher had to abandon a big chute of ore in the lower workings of the mine on account of water.

Stockton Hill mines, in Mohave county, will some day astonish the world with their output. At present the ore bodies in the old mines have been worked to the water level, and machinery will have to be put on before further work can be done. A tunnel under the mountain would solve the problem.

J. S. Withers was in Kingman from the gold digging. He says the boys are all making some money, and many are taking out a good sized bank roll every day. He will return as soon as he receives the new dry washer recently ordered.

#### HARSHAW NOTES.

Mr. Powers is developing his Centennial mine, and is meeting constant encouragement. No stopping is being done. Two carloads of ore per month are taken from this property, and net the owner from \$12,000 to \$15,000. It promises to be one of the bonanzas of the southeast.



Richard Farrell has forty men employed on a very promising property which he calls the "Old Trench." Sometime ago, in the process of development, a lake of sulphuric acid was encountered. Tools were eaten up, and quite a loss occurred through the discovery of the unexpected deposit. The acid was finally pumped out, however, and work continued. There was every indication of a good, paying property in the "Old Trench."

## CALIFORNIA.

## KERN COUNTY.

As an illustration of how badly the desert mining fever has taken hold of the people, D. M. Pyle says that all the ground is taken up for fifteen miles southwest of the St. Elmo bonanza, near Randsburg, and for three or four miles in other directions.

It is reported on the quiet that Messrs. Lockhart & Stevens found some sort of a gold mine on their recent trip to Greenhorn. This will be good news to their many friends.—*Kern County Echo*.

George Kenyon is in San Bernardino from the Rand, and he brought with him a lump of gold which weighs about five and three-quarter pounds, and which is worth about \$1500. It is the product of the month's run at the bonanza mine, which Kenyon owns, near Randsburg, and for several months he has been in the habit of coming to the city of San Bernardino with a ball of the precious metal of about the same size.

Kenyon reports that active work is still in progress on some of the mines, and that some prospecting is being done, while there is a large number of men in the district, but that prospecting will be much more general as soon as the weather moderates and there is plenty of water, which is still very scarce.

Within the past few days an important company has been incorporated in Arizona, with headquarters at the Bullard building, in Los Angeles. The "Mojave Land, Water and Mining Company" has selected the southern part of Kern county for its field of operations and will embrace the development of agricultural lands, water and mines, both placers and quartz mines.

The gentlemen forming the Board of Directors are as follows: Dr. F. M. Endlich, of Los Angeles, President; Dr. M. A. Menges, of Santa Ana, Vice President; Evan Davis, of Orange, Secretary and Treasurer; William H. Taggart, of Kingman, Arizona, Assistant Secretary; W. M. Scott, County Recorder at Santa Ana; J. C. Gregg, of Orange, and Frederick Stock, of Los Angeles, Directors.

It is intended to commence work in the vicinity of the now famous Randsburg District, and if sufficient encouragement is given, a large custom mill and concentrating works will promptly be erected. By this means the miners will be enabled profitably to ship ores which are now too low grade to pay freight and treatment charges. The company will follow the old adage of "live and let live" and, while it is not locating in Mojave Desert for its health, it will so arrange its prices for treatment of ores that the miners can make money out of rock which now must be thrown over the dumps. In this way dozens of mines can be operated which, at present, must either work at a loss or quit altogether, and thus the chance of striking bonanzas will be greatly increased.

No one who is familiar with mining can fail to see the advantages which must accrue

to a new camp from such an undertaking, and we venture to predict that the work of this company, not only in assisting the development of many mines, but in the procuring of satisfactory water supplies, will push Randsburg and its neighbors forward to a point which, otherwise, they could not have attained for a long time to come.

## RIVERSIDE COUNTY.

C. L. Sherman has obtained a six months' lease of the Golden Chariot mine, and will begin work this week.

A \$1200 gold brick was shipped to San Francisco, on Thursday, Sept. 25th, the product from the Jumbo mine. This is the second shipment of gold bullion from this mine made in the month of September. The Jumbo mine is probably the best paying property in this section. It is situated near Perris.

Lumber has arrived at Perris for the new mill to be constructed at the Gavilan mine. The hoisting machinery for the mine arrived last week.

Constable Westerfield, of Riverside, who has just returned to that place from Indio, states that now the weather has moderated on the desert, there is a very general revival of prospecting. The mining interests, he says, never looked more encouraging. Men are outfitting and leaving the railroad station every day for the mining sections, and the indications are that the coming season will see very many more miners in the field than ever before in the history of this section.

There is a systematic movement being planned with a view to uncovering new mines as well as developing those heretofore discovered, and the whole excitement means that some rich prospects may be heard of before long.

Indio is one of the points on the railroad from which many prospectors start on their hunt for wealth and fortune.

The town, because of its proximity to the mines, is a central point, where miners and prospectors can be met in numbers almost any day.

P. H. Ronsse, of West Riverside, returned from the Colorado desert, October 8th, after spending three weeks on the isolated and sandy plains. Mr. Ronsse brought with him some very rich gold, silver, copper and lead ores, which assay from \$40 to \$300 per ton. He intends to go out again next week and establish a camp, and will commence at once to sink shafts. The mines are about 40 miles north of Yuma and some thirty miles from the Colorado river.—*Enterprise*.

The Last Chance and Hully Gee are two mines lately located in the Hemet district by the Los Angeles Exploring and Mining Company.

Mr. L. O. Wyer, an eminent mining engineer who has just arrived in Los Angeles from the desert north of Indio, reports the Hexahedron mine, about twenty-five miles north of Indio, as one of the leading finds of America. He says: "It is no defined ledge, but a mountain of ore. I have horned it, and to the best of my knowledge and belief, it is worth eighteen dollars a ton."

## SAN BERNARDINO COUNTY.

Y. R. Stephens, the owner of the Pathfinder mine, near Fremont's peak, left San Bernardino for the desert, September 30th, having

shipped from that city a 2-stamp mill, which he purchased from Ben Cowan. The mill is operated by a five-horse power gasoline engine.

The ore in the Pathfinder averages \$40 per ton and is free milling ore. The ledge runs about two and a half feet, and one shaft has been put down a distance of 100 feet, while several other shafts have been started. A recent shipment of 10½ tons netted \$1234.06, the ore being carefully sorted.

## NEW DESERT ROAD

To be Built from Walters Station to the Desert Mines.

Chairman Shaver, of the Board of Supervisors, of San Bernardino county, will make a trip out on the desert this coming week, to look up some road matters. Some time ago the Southern Pacific Company expressed a willingness to join with that county in the work of putting the road between the Virginia Dale mining section and Walters station, on the Southern Pacific road, in good condition, and also provide a water supply along the line of the road.

The Supervisors think the offer a good one, and have accepted the proposition, and Mr. Shaver will meet a representative of the company at Walters and they both will go over the road and decide what is to be done, after which the work will be ordered.

The Southern Pacific Company is interested in the matter, from the fact that the Atlantic & Pacific Company is building a spur line south from the main line to the mining section named, and the Southern Pacific Company has to, from force of necessity, do something to retain a share of the carrying trade of these mines, and that prosperous section which has come to the front very fast of late.

## NEW MEXICO.

The Golden Giant mill, near Pinos Altos, suspended operations on the 1st to make some needed repairs. It will resume work today. The shaft on the Golden Giant mine has attained a depth of 400 feet. As soon as the shaft has reached the 450 foot level, drifts will be run north and south upon the vein. The vein continues to improve in size and quality of ore as depth is attained.

The Donovan mine at Coyote Canon, near Albuquerque, is down about 100 feet and the Colonel has 100 tons on the dump that will average \$20. He expects to have the ore treated by the Milagros Mining and Milling company, in which case he will only have to haul in eight miles.

## Hillsboro Mines Output.

Output of Hillsboro gold mines for the week ending Thursday, Oct. 8th, 1896, as reported for the *Advocate*:

	Tons.
Butler.....	35
Richmond.....	90
Happy Jack.....	25
Snake Group.....	85
Opportunity.....	20
Sherman.....	15
Prosper.....	30
Eighty-five.....	30
Percha (silver-lead).....	10
Total.....	340

Total output since Jan. 1, 1896..... 19,235



W. P. Wright has some very promising property at Coyote Canon, near Albuquerque. On Thursday, Oct. 8th, he put in a shot to open a lead and was agreeably surprised to have a lot of free gold ore show up.

On the west side of the Pinos Altos range, and about three miles from Pinos Altos town, Frank Brennan is developing the Talcose mine, a great vein belonging to the Dorsey group. An adit level has been run upon the vein a distance of 90 feet. Development work will soon be commenced at the old openings on the surface. Work will also be started on the Quartzite claim, which has produced fabulously rich gold ore heretofore.

The C. & C. mine, located at San Pedro, near Albuquerque, is looming up in splendid shape. Mr. Mandell of Albuquerque is President of the company, and the stockholders are all men of the territory. A working shaft is now being sunk and will probably extend to a depth of 400 feet. Fair grade ore is found at a depth of 125 feet and the outlook is favorable for paying handsomely.

J. A. Webber, who owns some valuable mining property at Coyote Canon, returned to Albuquerque Oct. 9th from St. Louis, where he has been with a view of enlisting capital in the development of his mines. That he has been successful is evinced by the fact that he has already made arrangements to begin work October 12th. He has a group of three mines out there, all of which make a good showing as regards quality and quantity of ore.

The Vanderbilt Gold Mining company is rapidly developing the American mine, and is taking out high grade ore which they treat in their 15-stamp mill. Only about 50 per cent of the value of the ore is saved by amalgamation and they are saving the tailings. David Tinnen is foreman at the mine, and M. D. Gaylord is running the mill. It is located near Bland.

The Silver City Reduction Works, having completed the extensive dust chamber and several other needed improvements, started up the furnaces in full blast again last week. Everything about the works is running smoothly and ore is being sent in from many different camps in New Mexico and Arizona. The fame of the company, for square dealing and very moderate smelting charges, is spreading through the mining sections of the southwest and the smelting plant of the Silver City Reduction Works will soon be known as one of great magnitude and importance among the ore producers of the country.

R. M. Carley and Pablo Aranda, while working the placers near the San Lazarus claims at San Pedro, struck a rich seam of quartz two to four inches wide that is full of free gold. It will yield big returns. Carley is at Cerrillos, Santa Fe county, with a number of specimens that have created a furore among the miners. The strike is on public land.

The Queen City Mining company has filed articles with the Territorial secretary reciting the following particulars: Incorporators, Mrs. Jamima Burgess, Wm. R. McElvain, Owen M. Dry, W. H. Long and Harvey B. Fergusson, all residents of the county of Bernalillo; objects, mining and reducing ores; capital stock, \$1,000,000; life, fifty years; directors, same as incorporators; principal place of business, Albuquerque.

The road up Chloride creek in Sierra county, has been repaired from Chloride as far as the Silver Monument mill.

#### Hillsboro Gold Mines.

The Thurmond Mining Co. paid off on the 1st inst.

Hornish & Schaffer, two of the best miners in the district, have taken a lease on the Opportunity south shaft.

Forty tons of high grade ore were shipped from the Snake and Opportunity mines to the Silver City matte smelter this week.

The Richmond mine is getting ready to make a shipment of two cars of high grade ore to the Pueblo smelters.

Some very rich gold quartz float has been found in the mineral belt between Hillsboro and Lake Valley, and considerable silent prospecting is in consequence going on in that quarter.

Hand and Carpenter are pushing their mining operations south of the S. L. C. ranch with considerable vigor these days. Recent assays of their ore have proven very satisfactory, running well in silver and lead and carrying several dollars in gold.

Larson & Schaffer are leasing on the Hornet mine at Tierra Blanca, and Simpson and Riggins are leasing on the Lookout mine on Trojillo creek. They are all doing well.

#### Black Range Notes.

The manufacture of brick for the smelter is rapidly progressing.

Joe Oliver is assisting Dr. Blinn in the development of his claims on Bryer's run.

For the past week men have been engaged in cleaning out and re-timbering the well at the old lixivation works.

M. G. Burgher has struck a vein of copper ore fourteen inches wide which runs 40 per cent copper. He has eight men at work on the property. It is near Rincon, in Dona Ana county.

#### PINOS ALTOS.

A. Hersberger is working ten men on his Western mine. He is running a crosscut from the 300-foot level to intersect a parallel vein to the Western. The crosscut is 22 feet and it is expected to cut the new vein within four or five feet. A mill-run on the Western ore was made at the Stanley-Martin mill last week with the usual rich results in gold bullion.

#### MEXICO.

Monday, October 5th, there was forwarded from Nogales, Sonora, the regular monthly shipment of a carload (twelve tons) of ore, from Las Planchas mines in the State of Sonora. The shipping ore returns about 150 ounces of silver per ton. The mine continues to improve, and the mill will be ready to begin operations about the last of October. It would have been ready earlier but for delays in receiving machinery, a small amount of which has been received and sent out to the mines by Miguel Bornio, the manager, consisting of several ore cars, rails for tracks and other material for use in the operations out there.

The Grand Central Company has ordered the erection of a heavy hoist and sinking of a four compartment shaft on the old Grand Central property at Las Amarillas, in the State of Sonora. The new railroad will build a spur to the site to haul in the lumber, timber, machinery, etc.

They have passed the 1000-foot level in the Creston mine and find the ledge wider and richer than ever. They expect to run the three-compartment shaft down until they reach the 2000-foot level, or possibly deeper.

It is reported that Enrique C. Creel the banker has bought for an American company the mining property of Magistral, in the State of Chihuahua. The new company has sufficient capital with which to develop the mine on a large scale.

A rich vein is reported to have been struck in the mineral district of Ocampo, state of Chihuahua. It is supposed to be a continuation of the rich vein on which the Santa Eduwiges people are now working and which is paying handsomely. Santa Eduwiges is the oldest mine in the Ocampo district and has turned out a fortune for its owners. The mine is owned by a Mexican company at Chihuahua.

New machinery has been ordered for active work in the San Tomas Apostol mine near Pachuca. Very favorable reports have been made on this mine by Walter Rule, Juan Angove, Guillermo Skewes and Sr. Ramirez, all of whom are persons well versed in mining matters. What work has already been done on these mines has shown good results.

#### Santa Rosalia Mine.

The Santa Rosalia mine is about eight miles from the old town of Arizpe, in the district of Arizpe, State of Sonora. It has a record of production of several million dollars in gold, but has been practically abandoned in the past fifty years. Several attempts to work it of late years were made by different parties, but the water in the shaft and caved state of the workings prevented any successful operations until within the last two years, when two Americans who heard of the vast riches that were taken out of the mine in former years denounced and took up the property and went to San Francisco to raise money to reopen the mine.

A company was formed called the Santa Rosalia Gold Mining company and 51,000 out of 100,000 shares of the stock sold, the other 49,000 shares being given to the locators as the purchase price of the mine.

The 51,000 shares were mainly purchased by the persons connected with the San Francisco Mint. They were bought at a stated price of 18 cents per share, to be paid for in monthly installments of 1 1/2 cents per share, no stock being issued until the final of the 12 monthly payments were made and the stock fully paid for. This was to avoid any stock speculations, the company having been organized as a legitimate mining development proposition. No salaries were paid to any one the first year.

The two locators who sold the mine to the company agreed to act as superintendent and assistant superintendent without salaries, they being paid only \$30 a month each for a year for their expenses, therefore the entire income from the monthly assessments was applied to the actual development of the mine.



In cleaning out the mine eight or ten tons of rich ore were found and this was eventually shipped. The ledge averages about twelve feet in width, and running through it are hilos or seams of very high grade ore. The ore from these hilos is all that is shipped, the sorting being done by hand on tables. The rest of the ore that is worth \$100 per ton is saved and the balance cast aside. The sorted ore which is shipped is packed on mules about 75 miles, and then sent by rail to Nogales, whence it is shipped to San Francisco or Denver in carload lots. That so far shipped has paid at the smelters from \$1075 to \$1650 per ton. In the future, however, sorting will not be done so closely and the grade of ore for shipment will be kept down to \$600 or \$800 per ton.

The mine has been expensive to work thus far, as no machinery has been used for pumping or hoisting. It has taken twenty-four men to keep the mine free of water by the use of common hand pumps. Now, however, a gasoline hoist has been provided and bailing tanks will be used to keep down the water.

The company owning the mine is a private one, and no stock has been placed on the exchanges or open market. Before the end of the year in which assessments were made the mine was all paid for and there was a good balance in the bank. There are no debts, all the plant has been paid for and there is still a balance of about \$12,000, also eight or ten tons of very rich ore ready for shipment. A warehouse for ore and gasoline has been put up at Imusez, on the railroad line. The mine is now well equipped in a small way, but there is no reduction plant. With the new machinery they will be able to sink deeper than the Mexicans ever did and expect to find the same character of ore as above. If the developments warrant, reduction works will be provided, but at present they are not contemplated, as the ore pays so well to ship. The whole ledge could be worked at a handsome profit if there was a mill on the property. The expenses of operating the mine are about \$3000 per month.—*Two Republics.*

## GENERAL NEWS

A Scotch syndicate has paid \$1,500,000 for the Diamond Hill property at Townsend, Mont., and will put an additional 100 stamps in the mill.

GENTLEMEN: We beg to call your attention to our Hammered Steel Shoes and Dies, brand "California." A home production. We are sole manufacturers of these celebrated forgings, and can guarantee them to be equal to the best, being made of a superior quality of high grade steel. Warranted not to batter up or clip off, or break at the shank. We desire to say that these shoes and dies are not cast in the desired shape and then hammered marked over, as some so-called hammered shoes and dies are, but are taken from the ingot of specially selected steel and put in the desired shape under a large steam hammer, after which they are put through certain processes which we control, which hardens them and closes in the grain, rendering them compact and very dense. We shall be pleased to quote you prices on application, together with any other information you may desire.

Yours very truly,

GEO. W. PENNINGTON & SONS,  
218 and 220 Folsom St., San Francisco.

California has a mining law which requires claim owners, within thirty days after doing their annual assessment work, to file with the county recorder on affidavit describing the work performed, and refer to the record of the notice of location. A failure to comply with the law leaves the mine open to re-location.

### Manitou Tunnel Power Plant.

This station is located a short distance above the Iron Springs Hotel, at Manitou, Colorado, and consists of a 500 horse power Pelton Wheel direct connected to a General Electric Company's generator. The wheel runs under a head of 600 feet and is speeded at 600 revolutions.

The power thus generated is carried a distance of 8 miles and runs an air compressor for supplying the drills, operating in what is known as the Strickler Tunnel, which is being driven through a spur of Pike's Peak range. This tunnel is 6,400 feet long and forms a part of the new water works system of Colorado Springs. Operations on the tunnel are carried on from both ends, and light as well as power is supplied from the station for the power house as well as all under-ground work.

This is believed to be the first instance in which the resources of water power and electricity have been brought to bear upon a project of this character. The facility it has afforded for the rapid and economical prosecution of the work has been a gratifying surprise to all interested in the enterprise.

The 13 inch main supplying Colorado Springs carries a pressure at the reservoir of 170 pounds, which it is now proposed to utilize, by means of Pelton wheels and electric generators, for lighting the city.

A report was brought to Hackberry Monday Oct. 5th, by Mohave Indians, says the *Kingman Miner*, to the effect that a few evenings before, while the employees of the Barnhart Placer Mining company, operating on the Colorado river a short distance above Scanlon's ferry, were at supper they were startled by a terrible roaring in the canyon above and were horrified to see a body of water towering twenty feet above the level of the river, coming down on them at railroad speed. They had just time enough to escape to higher ground when the wall of water broke over the company's works and when it had passed away there was left the placid shining sands as of yore. The loss will be heavily felt by the company, as they had just put the works in running order. The cause of the flood is unaccountable, as no rain has fallen up the river for over a month.

Later reports say the company's works were not washed away but were only covered with sand. As to what extent the damage is we are unable to learn.

### Panamint Mines.

At Taylor mine drift No. 3 shows at face of tunnel between 5 and 6 feet of gold bearing quartz, averaging \$41 in gold per ton.

In drift No. 2 a body of gold bearing quartz over 4 feet has been encountered assaying from \$9.37 to \$85, giving a general average of about \$60 per ton.

As development work progresses the quartz seems to increase in value and as depth is attained the vein matter appears to become softer and the pay streak wider.

The Cole mines show fine bodies of gold bearing quartz needing only proper reduction plants to make them bullion producers.

At the Hunts' mines considerable amount of gold bearing quartz has been developed.

The only drawback to the district is lack of capital to make the mines productive.

The Mineral Hill group of mines in the Panamint mountains has been sold to a syndicate of which Dave Moffatt of Denver, Colorado, is at the head.

The Newsboy mine, which lies between the Mineral Hill group and the Panamint Valley mine, has been thoroughly sampled and a six-foot pay streak was encountered that averaged about \$80.00 assay value. The Newsboy is being developed by San Francisco parties.

About nine miles south of the Mineral Hill group of mines a rich strike has been made which the discoverers claim will run over \$150 to the ton gold. Some of the ore assayed as high as \$600 per ton.

The Golden West mill in Pleasant Canyon is steadily pounding away on ore from the Mineral Ranch group of mines that will run over \$40.

The Silver King Mining company of Calico, have closed down their properties on account of the low price of silver. The average amount of silver produced by the Silver King mines has been 25,000 to 30,000 ounces per month until recently, when silver began to fall and they were compelled to decrease the output and have now shut down entirely.

## PERSONAL—NEWS ITEMS

Col. W. A. Hartt, superintendent of the Oro Blanco Mining Company, was in Tucson, on a business trip, October 1st.

Messrs. Humphreys & Allen, the Colorado capitalists, who recently secured the Milagros group of mines, out in Hell canon, N. M., arrived in Albuquerque, and visited the old smelter building, south of the city, with a view of purchasing.

J. H. Leonard, who has been prospecting on Little Rock creek, in San Bernardino county, has just returned to Los Angeles, and paid the JOURNAL a visit, the 8th inst.

Frank Nicholson, the mining engineer, of Phoenix, Arizona, who has just returned from Mexico, where he went to investigate some mining properties, in the interest of English capitalists, will leave in a few days for British Columbia on a like mission, and from there will go to England.

J. R. Ferguson left La Belle, N. M., for his home at Sulphur Springs, Texas. He disposed of his interests in the Houston Company, and also in the Bessemer group, east of the Comanche, to G. W. Downey.

D. M. Pyle was in Bakersfield, Cal., October 8th, from the desert mines, and reports things in a prosperous condition.

James Shirley, the Prescott, Ariz., mining man, is in Chicago on mining business.

W. L. Terrett, of La Belle, N. M., is in Colorado for a few weeks, and expects to close some very important mining deals before his return.

T. W. Lockhart left Bakersfield, Kern county, Cal., for Randsburg, Cal., on a prospecting trip.

Chas. Ober, of Albuquerque, N. M., was in Bland, N. M., last week, to look after his interest in the Victor, Barney, Criterion and Bert mines, in Colla canon, near Bland.

Hon. G. W. Hull, who has been at Agua Fria during the past week, superintending the construction of his ten-stamp quartz mill, returned to his home in Jerome, Ariz., Oct. 3rd.

W. E. Dame, of Cerrillos, N. M., was in Santa Fe. He is just returning from Mexico, and found things down there very prosperous.

Any one wishing a first class foreman, in a copper or lead smelting works, one who understands blast furnaces, ore sampling, handling men, etc., one who can speak Spanish very fluently, and has the very best of references, will read the Plomo ad. at the top of page 13.



Dr. R. H. Stevens has left Bakersfield, Cal., for the desert mines, where he will dig for gold.

E. L. Giroux, a mining man of Oregon, was the guest of his brother, Superintendent Jos. L. Giroux, of the United Verde Copper Co.'s property at Jerome, Ariz., the first few days of last week. Mr. Giroux is on his way to Paris, France.

Jack Brennan, of Cerrillos, N. M., was in the Cochiti district, during first part of October, looking over his properties there.

H. A. Rising, manager of the gypsum mill at Corona, (formerly South Riverside) Cal., who was in Los Angeles the latter part of September, returned the 1st inst. to Corona.

Hon. B. B. Gage of Congress, was a notable northern member of the convention held in Phoenix, Ariz., the last of September.

Alex. Bowie, jr., left Gallup, N. M., for Golden, Colo., where he will attend the mining school for the year just beginning. Wallace Bowie will attend the university at Albuquerque this year.

Chas. Reel was in Bakersfield, Cal., from the Panamint mining district a few days ago, and like others, he thinks there are some large deposits of ore out there, but he believes it is chiefly low grade and will not be worked till men of large means go in and put in big plants for milling the ore in large quantities.

Dr. J. M. Ford has left Phoenix, Arizona, for New York, to close the deal for some important copper properties at Globe.

W. B. Rice, of Panamint, Inyo county, Cal., was a caller at the JOURNAL office, during the first week of October. He reports everything progressing nicely in the Panamint country.

Jack Spradling, of Chloride, returned to that place from Colorado a few weeks ago.

Guy McPherson left Hillsboro, N. M., for Bisbee, Ariz., week before last, to look over that mining camp.

Col. James A. Moore was in Chihuahua, Mexico, from his Placer de Guadalupe mines last week, and went on to Boston, Mass., on a flying business trip.

Chas. Stevenson, the mining man of Las Vegas, N. M., was in Bland, N. M., the latter part of last week.

H. S. Merrill, the mining man of Phoenix, Arizona, went out, October 3rd, to the Mexican mine on Cave Creek, a property he has owned and operated successfully for some time.

B. Salazar, manager of the firm of Krakauer & Sanchez, at Cusiuhiriachic, was in Chihuahua, Mexico, the 7th inst., to attend to business. Mr. Salazar is largely interested in mining in Mexico.

T. P. Carson, the mining man, has returned to Phoenix, Ariz., from a trip through Mexico.

J. F. Orr, formerly assayer at the Concheno mine, was in Chihuahua, Mexico, Oct. 10th, on his way to the United States to accept a similar position.

Wallace Fairbanks, a son of N. K. Fairbanks, the Chicago millionaire, arrived, October 9th, in Phoenix, Ariz., from Congress, where he is engaged in mining.

James A. Carlisle, of Santa Fe, N. M., was in Bland, N. M., October 9th, on mining business.

Richard Crow, of the Yarnell mine, in Yavapai county, who has been stopping at Prescott, Ariz., returned home October 9th.

Walter C. Millar has been appointed the Prescott agent for the United Verde Copper Company, of Jerome, Arizona.

G. A. Smith, of the firm of Nolan & Smith, of Los Angeles, Cal., has just returned to this city from a trip to Yuma, Ariz., and up the Gila River, where he went to examine some mining properties.

Wm. Webster returned to Albuquerque, N. M., October 9th, from Goldfields, Ariz. Mr. Webster reports the Mammoth mine as steadily running twenty stamps on gold ore.

Si Bryant returned to Tombstone, October 10th, from Turquoise, where he has been doing assessment work on his mines.

Mr. Dickman, manager of the Hillsboro and Cleveland Gold Placer Hydraulic Company, arrived in Hillsboro, N. M., the first part of this month, to look over the company's affairs.

Thos. R. Sorin arrived at his old home, in Tombstone, Ariz., October 10th, from the east. He is looking fine and says he enjoyed his trip hugely.

Lawrence O. Wyer, a mining expert, who, after nine years' mining and prospecting in Arizona, returns again to California, gave the JOURNAL a pleasant call, October 15th. Mr. Wyer has been out in the desert examining the Hexahedron mine, about 25 miles north of Indio.

P. W. Thomson, ticket agent of a railroad out of Los Angeles, is in Phoenix, Ariz. He has mining interests in the Vulture district, with J. E. Bark.

#### OBITUARY.

Bartolla Pana, an old-time placer miner at Golden, N. M., who has been a resident of that place and a miner since before the first gold excitement in California, was found dead beside his dry washer about three weeks ago.

Arthur L. White, chief of the local Weather Bureau at Phoenix, Ariz., was killed at Congress, Ariz., the fore part of October, by being crushed under the cars, which were piled up by the side of the track in the shaft of the mine.

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Very respectfully,

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By *J. R. Slater*  
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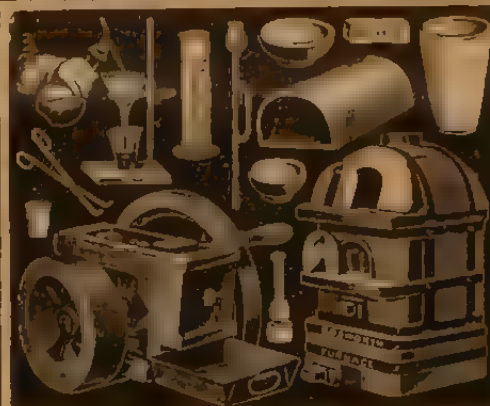


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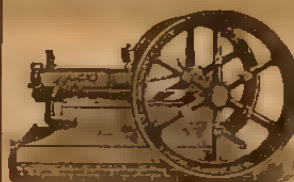
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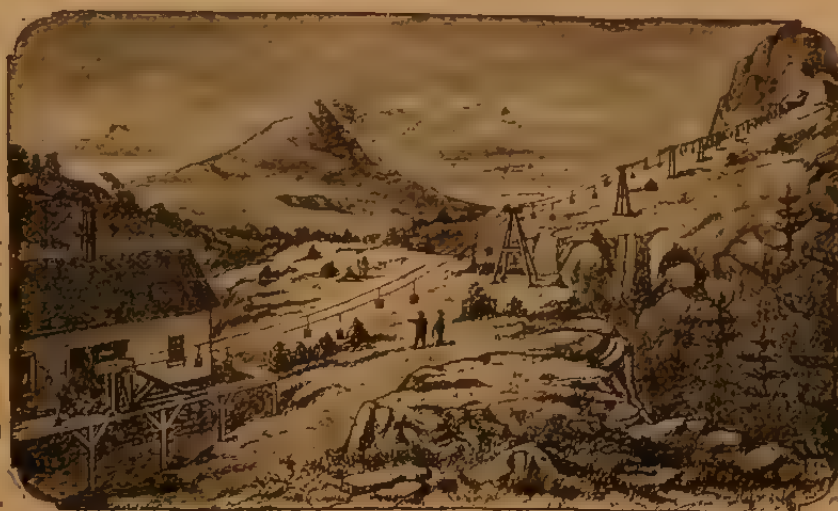
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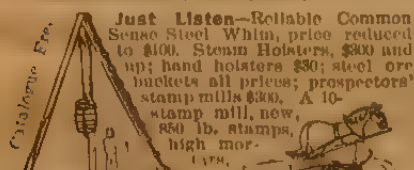
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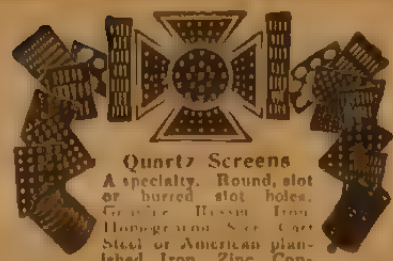
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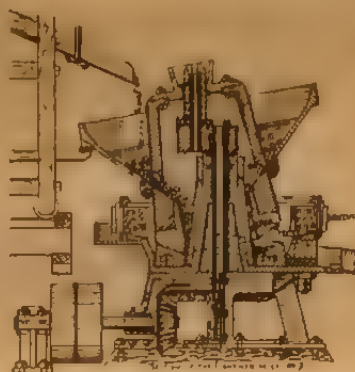
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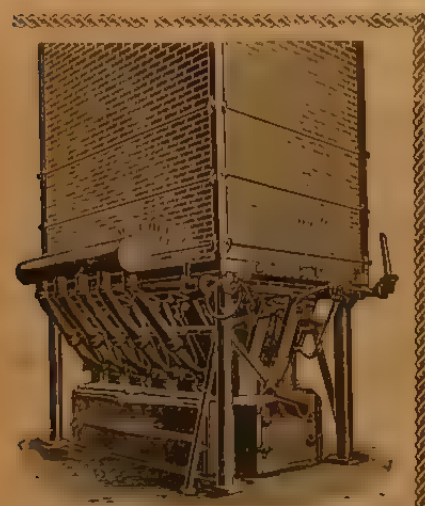
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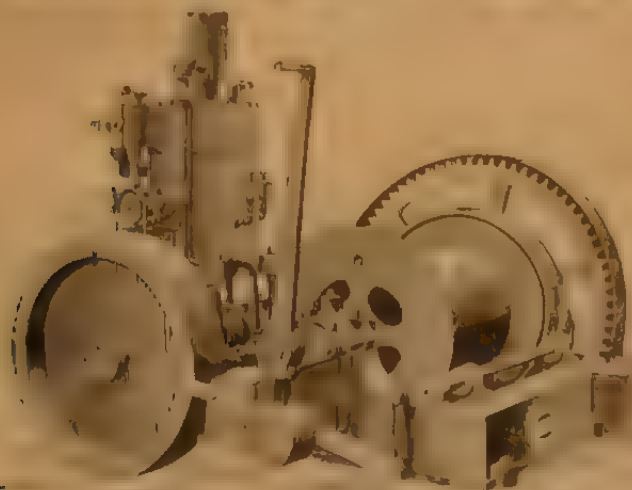
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Oct. 1	65 1/2	10 7/8	2 7/8
" 2	65 1/4	10 7/8	2 7/8
" 3	65 1/4	10 7/8	2 7/8
" 4	65 1/4	10 7/8	2 7/8
" 5	65 1/4	10 7/8	2 7/8
" 6	65 1/4	10 7/8	2 7/8
" 7	65 1/4	10 7/8	2 7/8
" 8	65 1/4	10 7/8	2 7/8
" 9	65 1/4	10 7/8	2 7/8
" 10	65 1/4	10 7/8	2 7/8
" 11	65 1/4	10 7/8	2 7/8
" 12	65 1/4	10 7/8	2 7/8
" 13	65 1/4	10 7/8	2 7/8
" 14	65 1/4	10 7/8	2 7/8
" 15	65 1/4	10 7/8	2 7/8

## MINING STOCK QUOTATIONS.

Alamosa .....	50	Franklin .....	10 00
Atlantic .....	18 00	Kearns .....	10 00
Boston & Mont' ..	75 00	Quincy .....	23 00
Butte & Boston ..	1 55	Quincy .....	108 00
Cal & Hecla .....	300 00	Tamarack .....	75 00
Centennial .....	2 00	Wolverine .....	8 00

## COLORADO SPRINGS STOCKS

Anaconda .....	50	Mollie Gibson ..	55
Blue Bell .....	05	Matos .....	11
Colfax .....	05 1/2	Mount Rosa .....	12
Columbine .....	02 1/4	Ophir .....	07
Fanny Rawlins ..	05	Orphan Bell .....	17
Gold King .....	50	Pharmacist .....	10
Gold and Globe ..	32	Portland .....	1 45
Isabella .....	04	Work .....	8
Jack Pot .....	04	World .....	02 1/2
Jefferson .....	18	Del Monte .....	02 1/2
Monarch .....	08		

## DENVER STOCK REPORT

Alamo .....	03	Anaconda .....	50
Bangkok .....	05	Aols .....	03
Bankers .....	10	Big Six .....	10
Crescent .....	05	Boston & Id .....	17
C. C. Con .....	12	Colfax .....	06
Chimbarazo .....	03	Gold & Globe ..	17
C. & O. C. .....	04	Mollie Gibson ..	50
Golden Pledge ..	35	Mt. Rosa .....	12
Gold Standard ..	04	Pharmacist .....	10
Isabella .....	54	Union Gold .....	30

## HELENA, MONTANA

Alce .....	25	Granite Mount' ..	1 05
Butte .....	2 55	Hope .....	1 50
Benton Group ..	10	Iron Mountain ..	42
Bi Metallic .....	3 00	Ontario .....	1 08
Elizabeth .....	10	Poorman .....	40

## NEW YORK.

Crown Point .....	45	Sierra Nevada ..	85
Con. Cal. & Va. ..	1 30	Standard .....	2 75
Gould & Curry ..	80	Union Con .....	50
Hale & Norcross ..	1 25	Iron Silver .....	10
Homestake .....	80 50	Quicksilver .....	3 00
Mexican .....	60	Quicksilver pfd ..	17 02
Ontario .....	14 50	Bulwer .....	25
Ophir .....	1 20	Yellow Jacket ..	35
Plymouth .....	20	Deadwood .....	45

## SAN FRANCISCO

Alta .....	10	Mono .....	15
Belcher .....	27	Nevada Queen ..	50
Best & Belcher ..	30	Ophir .....	85
Bodie Con .....	55	Potosi .....	85
Chollar .....	2 25	Savage .....	75
Con. Cal. & Va. ..	1 30	Sierra Nevada ..	85
Crown Point .....	45	Union Con .....	45
Hale & Norcross ..	1 25	Utah .....	71
Mexican .....	55	Yellow Jacket ..	45
Gould & Curry ..	85	Bulwer .....	25

## ST. LOUIS.

American Nettle ..	25	Elizabeth .....	20
Granite Mt. ....	1 50	Leo .....	3
Adams .....	80	Hope .....	1 40
Bi-metallic .....	3 30	Small Hopes .....	80

## SALT LAKE CITY.

Ajax .....	85	Eureka Hill .....	120 00
Alliance .....	30	Morm Silver .....	2 05
Am. Nat. G's .....	03	Little Pittsburg ..	03
Anchor .....	1 25	Lucky Bill .....	25
Apex .....	07	Mammoth .....	3 05
Bogart .....	20	Meers .....	50
Bull. Beck .....	8 70	Mercur .....	7 10
Cane Springs .....	80	New Tinde .....	2 80
Cent. Eureka .....	75 00	Niagara .....	2 25
Cleve. Con .....	45	No. Eureka .....	05
Comstock .....	15	North Spy .....	2 40
Crescent .....	04	Ontario .....	12 00
Dalton .....	04	Silver King .....	17 25
Daly .....	7 50	Silver Spar .....	1 00
Daly West .....	8 70	Tetro .....	07
Elko .....	20	Utah .....	1 85

## MEXICO

Name of Company	State	Price
Agustinas .....	Guanaajuato	\$ 400
Asturianos y Anexas	Zacatecas	440
Cerro Colorado .....	Chihuahua	10
Concepcion y Anexas	S. Luis Potosi	180
El Oro .....	Guanaajuato	80
do pre .....		00
Luz de Borda .....	Michoacan	30
do. Free stock .....		30
Luz de Maravillas ..	Hidalgo	110
Real del Monte .....		850
Rosario y Anexas ..	Durango	70
do. pref .....		00
San Rafael del Oro ..	Guanaajuato	90
Sta. Gertr y Anexas	Hidalgo	187
do. Free Stock .....		201
Sta. Maria de la Paz	S. Luis Potosi	506
Tlaxiungo .....	Puebla	800
Zomelahuacan (gold)	Vers Cruz	01
Zona Min. de Pozos	Guanaajuato	5

Note.—The above Mexican stocks are figured  
on the basis of Mexican silver



## INCORPORATED MINES PAYING DIVIDENDS.

NAMES OF MINES	LOCATION	No. of Shares	Capital Stock	Par Value	Amount of last Dividend	Date of Last Dividend	Total Amount Paid in Dividends	Kind of Mineral Produced
Adams	Colorado	150,000	\$ 1,500,000	\$ 10	\$ 0.01	October 1895	\$ 600,000	S, L, C.
Alaska, Frondwell	Alaska	200,000	5,000,000	25	15	August, 1896	2,900,000	G.
Alaska, Mexican	Alaska	200,000	1,000,000	5	09	August, 1896	155,000	G.
Annemba	Montana	100,000	30,000,000	25	02 <sup>1</sup>	May 1896	75,000	C.
Bald Butte	Montana	200,000	2,000,000	1	01	December 1895	45,000	S, G.
Bangkok C-Bell	Colorado	600,000	600,000	1	1	July 1896	60,000	S, L, C.
Big Six	Colorado	500,000	500,000	1	00 <sup>1</sup>	May 1896	25,000	G, S.
Bohne Consolidated	California	100,000	10,000,000	100	25	December 1891	1,677,072	G.
Boston & Montana	Montana	170,000	3,750,000	25	5.00	August 1896	4,175,000	G, C, S.
C. O. D.	Montana	500,000	500,000	1	01	March 1896	25,000	G.
Calumet & Hecla	Michigan	100,000	2,500,000	25	5.00	July 1896	1,800,000	C.
Centennial Eureka	Utah	30,000	1,800,000	50	1.00	August 1896	1,800,000	S, L.
Champion	California	3,000	3,000	10	10	August 1895	216,500	G.
Coeur D'Alene	Idaho	500,000	5,000,000	10	00	June 1893	140,000	S, L.
Colorado Central	Colorado	25,000	2,700,000	10	05	April 1893	502,661	S, L.
Commonwealth	Nevada	100,000	10,000,000	100	20	November 1890	20,000	S.
Consolidated, California and Virginia	Nevada	216,000	21,600,000	100	25	March 1895	3,952,800	S, G.
Coptis	Nevada	100,000	10,000,000	100	01	Feb 1895	68,000	C.
Copper Queen Consolidated	Arizona	200,000	2,000,000	10	25	June 1895	1,910,000	C.
Daly	Utah	150,000	3,000,000	20	25	August 1896	2,887,500	S, L.
Deerwood Terra	Dakota	200,000	5,000,000	25	05	August 1896	1,240,000	G.
De Lamar	Idaho	400,000	2,000,000	5	25	April 1896	2,001,100	S, L.
Derbee B Gravel	California	100,000	10,000,000	100	05	March 1891	265,000	G.
Daltona Lark	Utah	2,500,000	2,500,000	1	00 <sup>1</sup>	August 1896	87,000	S, L.
Elkhorn	Montana	200,000	1,000,000	5	00	June 1895	212,000	S.
Elkton	Colorado	500,000	500,000	1	02	August 1896	75,000	G, S.
Enterprise	Colorado	500,000	2,500,000	5	25	June 1893	25,000	S.
Florence	Montana	500,000	2,500,000	20	5.00	May 1896	89,188	S.
Franklin	Michigan	40,000	1,000,000	25	2.00	January 1894	1,240,000	C.
Gold Corn	Colorado	200,000	1,250,000	5	05	August 1896	80,000	G, S.
Gold and Globe	Colorado	750,000	750,000	1	3-10	June 1896	28,875	G.
Granite Mountain	Montana	400,000	10,000,000	25	20	July 1892	12,120,000	S.
Great Western	California	50,000	5,000,000	100	10	November 1893	388,000	Q.
Hecla Consolidated	Montana	30,000	1,500,000	50	50	February 1896	2,130,000	S, G, L, C.
Helena & Frisco	Idaho	500,000	2,500,000	5	04	August 1896	175,000	S, L.
Helena & Victor	Montana	200,000	1,000,000	5	25	May 1892	80,000	G, S.
Holmes	Nevada	100,000	10,000,000	100	25	April 1892	75,000	S.
Honestake	Dakota	125,000	12,500,000	100	25	August 1896	5,962,500	G.
Hope	Montana	100,000	1,000,000	10	10	January 1895	94,200	S.
Horn Silver	Utah	400,000	10,000,000	25	12 <sup>1</sup> / <sub>2</sub>	January 1896	5,157,500	S, L.
Iowa	Colorado	1,000,000	310,000	1	01	August 1896	40,000	G.
Iron Mountain	Montana	500,000	5,000,000	10	01	May 1896	410,000	S.
Isabella	Colorado	2,250,000	5,000,000	100	01	August 1896	180,000	G.
Kearsarge	Michigan	40,000	1,000,000	25	1.00	Dec. 1895	120,000	C.
Kennedy	California	100,000	10,000,000	1	48	August 1895	1,796,000	G.
Leadville Consolidated	Colorado	400,000	4,000,000	10	03	February 1893	316,000	S, L.
Lexington	Montana	40,000	4,000,000	100	90	July 1893	652,200	G, S.
Maid of Erin	Colorado	600,000	3,000,000	5	02	November 1895	740,000	S, L, G, C.
Mayflower	California	60,000	1,200,000	20	10	December 1895	242,000	G.
Minnesota	Minnesota	165,000	16,500,000	100	1.50	July 1896	3,240,000	L.
Mollie Gibson	Colorado	1,000,000	5,000,000	5	05	January 1895	1,080,000	S.
Montana Lt.	Montana	600,000	3,300,000	5	00 <sup>1</sup>	October 1895	2,800,557	G, S.
Moose	Colorado	600,000	600,000	1	01	January 1896	186,000	G.
Morning Star	California	2,400	240,000	100	7.00	October 1895	446,100	G.
Moulton	Montana	400,000	2,000,000	5	05	February 1894	460,000	S, G.
Mercur	Utah	200,000	5,000,000	25	12 <sup>1</sup> / <sub>2</sub>	July 1896	47,000	G.
Mt. Rosa	Colorado	1,000,000	1,000,000	1	00 <sup>1</sup> / <sub>2</sub>	Jan. 1895	10,000	G.
Napa	California	100,000	700,000	7	20	July 1896	790,000	Q.
New Guston	Colorado	110,000	550,000	5	75	October 1892	1,877,500	S.
North Banner Consolidated	California	100,000	1,000,000	10	05	July 1891	20,000	G.
North Star	California	100,000	1,000,000	10	50	June 1893	450,000	G.
Nugget	Colorado	1,000,000	1,000,000	1	00 <sup>1</sup> / <sub>2</sub>	Jan. 1895	10,000	G.
Omaha Consolidated	California	24,000	2,400,000	100	15	July 1894	97,200	G.
Ontario	Utah	150,000	15,000,000	100	10	August 1896	13,310,000	S, L.
Osceola	Michigan	50,000	1,250,000	25	1.00	July 1896	2,072,500	C.
Pacific Coast Borax	California	20,000	2,000,000	100	1.00	July 1893	422,500	B.
Parrot	Montana	230,000	2,300,000	10	10	June 1894	1,622,000	C.
Plumas Eureka	California	140,800	1,406,000	10	18	October 1893	2,696,295	G.
Poorman	Idaho	800,000	3,750,000	125	15	September 1892	68,260	G, S.
Portland	Colorado	3,000,000	3,000,000	1	03	August 1896	733,000	G, S.
Quicksilver Pref	California	43,000	4,300,000	100	1.25	June 1891	1,823,911	Q.
Quincy	Michigan	50,000	1,250,000	25	6.00	August 1896	8,370,000	C.
Red Cloud	Idaho	200,000	1,000,000	5	10	December 1892	153,000	S, L.
Rialto	Colorado	300,000	300,000	1	01	April 1892	50,250	G.
Richmond	Nevada	54,000	1,350,000	25	25	September 1893	4,388,780	S, L.
Rico Aspen	Colorado	1,000,000	5,000,000	5	02	November 1894	325,000	S.
Sierra Buttes	California	222,500	2,225,000	10	12	October 1893	1,559,933	G.
Silver, Mg	New Mexico	500,000	500,000	1	4.05	December 1891	300,000	S.
Small Hopes Consolidated	Colorado	250,000	5,000,000	20	10	March 1896	3,275,000	S.
Standard	California	100,000	10,000,000	100	10	June 1895	3,771,150	G, S.
Tom Boy	Colorado	200,000	200,000	10	20	March 1896	410,000	G.
Tamarack	Michigan	50,000	1,250,000	25	3.00	June 1896	4,320,000	C.
Trinity River	Colorado	500,000	500,000	1	.....	April 1894	37,500	G.
Union	Colorado	1,250,000	1,250,000	1	01	June 1896	73,000	S.
United Verde	Arizona	300,000	3,000,000	10	25	December 1893	562,500	C.
Victor	Colorado	200,000	1,000,000	5	10	July 1896	505,000	G.
Yankee Girl	Colorado	260,000	1,300,000	5	25	July 1891	520,000	S.

S, Silver. G, Gold. L, Lead. C, Copper. Q, Quicksilver. I, Iron. B, Borax.



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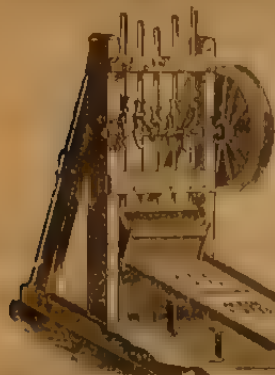


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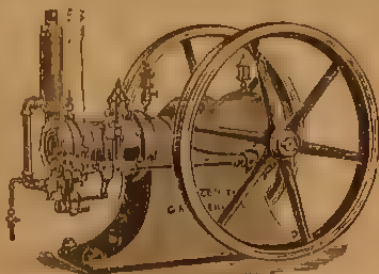


Made in Sections to Fit any Pipe

## THE ZENITH GAS AND GASOLINE ENGINE

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WEIGHT 25 PER CENT.  
LESS THAN ANY  
OTHER ENGINE OF THE  
SAME HORSE  
POWER. : ENGINES  
FROM 2 HORSE  
POWER UP.



THE SIMPLEST  
NOISELESS  
ECONOMICAL  
CLEANLY  
SMOOTH RUNNING  
EASY STARTING  
ENGINE

**Most Perfect Gas Engine Made**

BY FAR THE

COMPLETEST IN CONSTRUCTION, positive movements of all its working parts, New principle of governing which makes it the most ECONOMICAL; Runs as SMOOTH as a STEAM ENGINE; Starts without churning on the fly wheels; Crank and Piston are PROTECTED FROM DUST; Is adapted to all work where power is used. For full particulars address,

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## Special Boilers

of Special material and Workmanship. We don't make the cheapest, but for quality and design we make the best.

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Up-Town Office: 17th and Glenarm Streets,

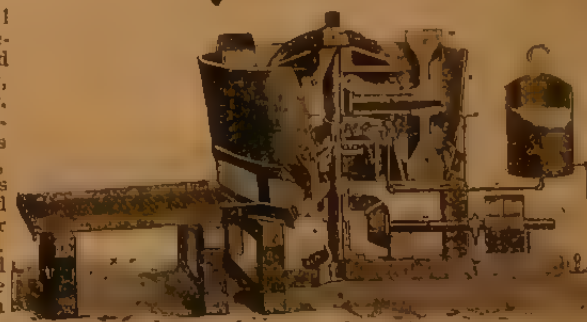
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30th and Blake Streets

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## HYDRAULIC \* QUARTZ \* MILL.

The only Mill in the world for reducing hard and tough ores cheaply, either wet or dry. Guaranteed superior to Stamps; less power required, very much less wear and tear, and a much higher per cent. of gold saved. Other so-called Quartz Mills are positively "not in it."



In operation daily. Custom Mill. Send us your ores. Call, or address,

**MERRALLS MILL CO.,**

45 and 47 Fremont Street, San Francisco, Cal.



GEO. E. NOLAN

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**The Machinery Supply Co.**

307 W. FIRST STREET, . . . . . LOS ANGELES, CAL.

Latest Improved Mining and Milling Machinery, Wire Rope.

Belting, Screens, Etc.

Electrical Motors, Dynamos and Supplies.

PACIFIC COAST AGENTS:

Snow Steam Pump Works' Mining and Sinking Pumps.

**THE BI-METALLIC ASSAY OFFICE**

AND CHEMICAL LABORATORY.

Assaying in all its branches. Determinations accurately made.

R. A. PEREZ, E. M., Mgr.,

FORMERLY: Chief Assayer El Paso Smelting Works, El Paso, Tex  
Assistant Chemist Consolidated Kanana City Smelting and  
Refining Co., Argentine, Kansas.

(Prompt Returns.)

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**GOLD MINES!** G. WHEATLEY.IN JULIAN DISTRICT,  
SOUTH CALIFORNIA.I have listed for selling, bonding, or  
leasing. Strict investigation invited.  
Letters of inquiry about any mine or  
company answered for \$1.

B. A. STEPHENS,

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and  
\* Mining

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TUCSON, . . . . . ARIZONA

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— DEALERS IN —

**Boiler Tubes, Iron Pipe and Fittings**

RAILROAD, MILLING, MINING and FOUNDRY SUPPLIES

214 and 216 N. Los Angeles Street

Los Angeles, Cal.

**Am. Zinc-Lead Smelter**

CANON CITY, COLORADO.

**NEW MEXICO AND ARIZONA SMELTER**

Hanover, Grant Co., N. M.

Will buy all kinds of ores; specialty made of copper ores and those containing zinc. Low  
grade refractory ores desired. Write for prices to either Smelter.

O. H. CURTIS, Gen. Agt.

New Mexico and Arizona Smelter.

F. L. BARTLETT, Gen. Mgr.

Canon City, Colorado.

**THE WILSON**  
Forged High Grade Steel  
**Shoes and Dies**Guaranteed to Wear Longer and Prove Cheaper than any others.  
Made by use of Special Appliances. Patented Aug. 16th, 1892.

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**JOHN WIGMORE & SONS CO.**  
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**Mining Supplies****Iron and Steel**

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make returns in Southern California, Arizona, New Mexico  
from 4 to 6 days quicker than from any other point.

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**BELTING** Of all Descriptions,**FOR MILLS MINES AND SMELTERS**

Specialties

DYNAMOS, WATER PROOF,  
RAWHIDE AND SEWED  
BELTING**Fred R. Cook,**

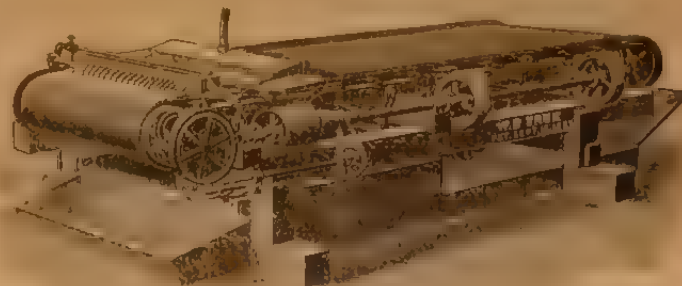
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Advertise in the Journal

**FRUE ORE CONCENTRATOR**

Over 4,200 in Actual Use

Manufactured under Patents of April 27, 1880; Sept. 18, 1883; July 24, 1888; and March 31, 1891



It can be safely stated, without going into a description of several new and untried concentrators that have lately come into the market, that where sulphurets are of such value as to make close saving necessary, the Frue Vanner is always used. It is the only endless belt concentrator in the market that can be rolled on to handle all classes of ores, and give universal satisfaction. (In all competition of concentrators the Frue Vanner is taken as the Standard machine of the world, and all comparisons made by it. There have been over 4200 of these machines sold, 1700 having been sold on the Pacific Coast alone.) They are in use in every part of the world where mining is carried on, and in all cases they are giving perfect satisfaction. From time to time valuable and important improvements have been made in this machine to increase its capacity and durability, and particular attention is called to the Patent Lip Flange for the rubber belt, which does away with nearly all the strain and wear of the old style of flange, making the life of belt more than double that of other style belts in the market. The lip of flange bends outward in going over the large end rolls, thereby distributing the strain in the solid rubber, and bringing virtually no strain either at the edge or at the base of flange, as is the case in all belts with a raised edge.

Prices of 4-foot wide Plain Belt Frue Vanner . . . \$500 f. o. b.  
Improved Belt Frue Vanner . . . 600 f. o. b.  
" 6-foot wide Plain Belt " . . . 600 f. o. b.

For any information, pamphlets, circulars or testimonials, call on or address

**JAS. S. BROWNELL,**Western Agent FRUE VANNER MACHINE CO.  
Successor to ADAMS & CARTER

132 Market Street,

San Francisco

W. B. Taylor

E. C. Ward

**Nevada Metallurgical Works**No. 71 and 73 Stevenson Street,  
San Francisco.

O. A. LUCKHARDT, Manager

Established 1860

Ores worked by any process, ores sampled  
Assaying in all its branches, Assays of Ores  
Minerals, Waters, Etc.O. A. LUCKHARDT & CO., Formerly Blatte & Luckhardt,  
Mining Engineers and Metallurgists.**School of Practical, Civil, Mechanical,**Electrical and Mining Engineering.  
Surveying, Architecture, Drawing and Assaying.  
723 MARKET ST SAN FRANCISCO, CAL.  
OPEN ALL YEAR

A. VAN DER NAILLEN, President.

Assaying of Ores, \$25; Bullion and Chlorination  
Assay, \$25; Blowpipe Assay \$10. Full Course  
of Assaying, \$50. Established 1864.  
Send for Circular**THE SOUTHERN CALIFORNIA LUMBER CO.**

— WHOLESALE —

**PUGET SOUND PINE AND REDWOOD LUMBER**

Delivered at any R.R. point in New Mexico, Arizona or California

FIRST-CLASS MATERIAL

LOW PRICES

PROMPT DELIVERY

Wharves and Yards, E. SAN PEDRO, CAL.

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**We make a specialty of Mining Trade**



# HAMMOND MANUFACTURING CO.

## MANUFACTURERS OF STAMP MILLS — CONCENTRATORS And all Classes of MINING MACHINERY



**Wire Rope Tramways** with Automatic Loading Apparatus permitting the ore bins to be permanently open.

Specialty made of the Improved, Iron Frame Self-Contained Stamp Mill, the greatest success of the day in reduction of ore to pulp. A great boon to mill builders in countries where timber is plenty and therefore a greater boon to those who have no timber from which to draw the huge pieces needed in old style mills. We claim for this mill:

- 1st. It is no longer a new thing, but well tried and its durability proven.
- 2d. Cheaper than the Wooden Frame Mill when ready to run.
- 3d. Saves a great amount of delay in erection and it can be set up in as short a time as a self contained engine.
- 4th. Saves much space.

**We call the attention of Prospectors to our Self Contained Two Stamp Mill.**

We have inaugurated a system of amalgamation and Concentration which renders both much more satisfactory and cheapens the cost of concentration by a great saving in the repairs to the complicated machinery now used.

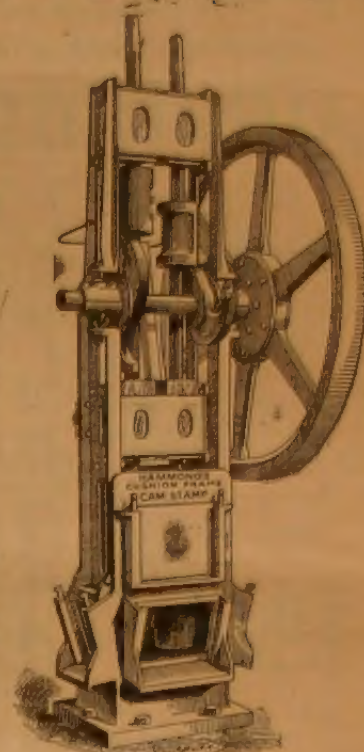
Parties intending erecting mining plants would do well to investigate our mills. We build any mill desired and will deliver F. O. B. Steamer or cars at San Francisco, California.

We are prepared to furnish parties desiring small plants in localities where fuel is extremely expensive, with mills coupled up and ready to run with gaso-line engines, guaranteeing the efficiency of both engine and mill.

Write us for Catalogues and Estimates

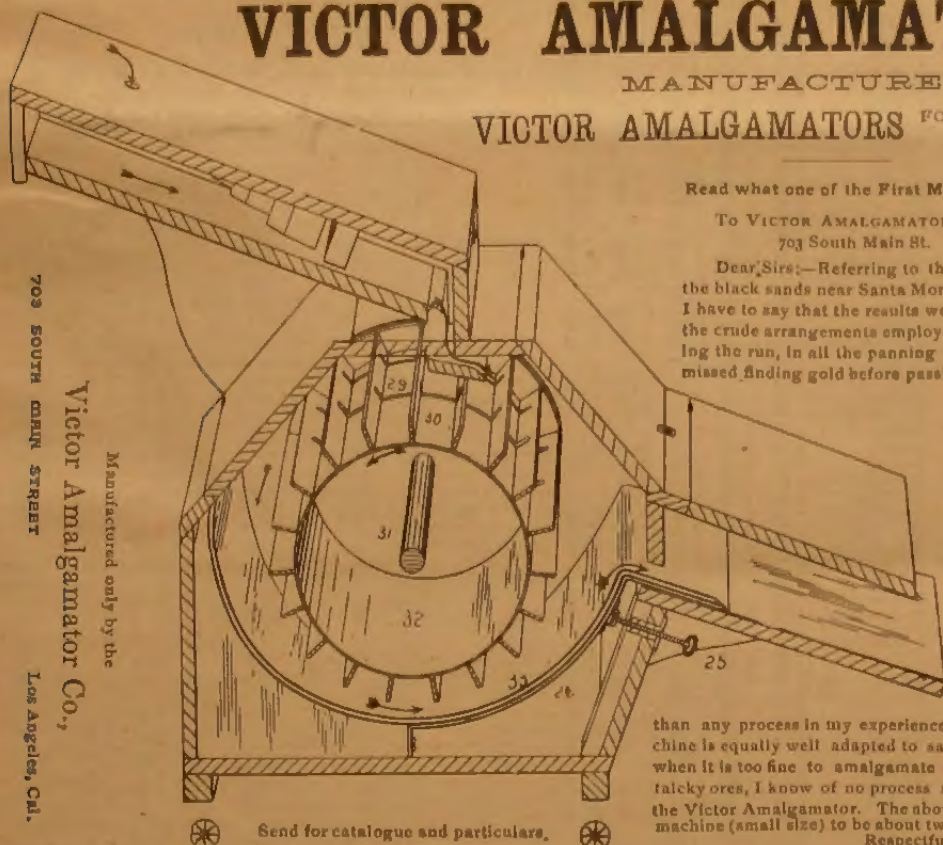
## HAMMOND MANUFACTURING COMPANY

69 First Street,  
PORTLAND, OR.



## VICTOR AMALGAMATOR CO.

MANUFACTURERS OF  
VICTOR AMALGAMATORS FOR MILL OR PLACER USE.



Read what one of the First Mill Men in the County Says of it

To VICTOR AMALGAMATOR CO  
703 South Main St. Los Angeles, Cal., May 20, 1896

Dear Sirs:—Referring to the run made by me of fifty tons of the black sands near Santa Monica with the Victor Amalgamator I have to say that the results were quite satisfactory, considering the crude arrangements employed in feeding the machine. During the run, in all the panning (of over one hundred) I never missed finding gold before passing through the machine, and after passing the machine, I found only two colors in panning after going through; In other words, only two colors were found in the tailings after panning over 120 pans. Of the many methods that have been tried for saving the gold from the sea-sands on this coast for the last twenty-five years, none have given as satisfactory results as the Victor. I have no hesitation in saying that the machine properly handled, will save a larger per centage of gold contained in sea-sands than any process in my experience of over thirty years. The machine is equally well adapted to saving the gold from mill tailings when it is too fine to amalgamate on ordinary plates. In milling talcky ores, I know of no process so well adapted to saving gold as the Victor Amalgamator. The above run showed the capacity of the machine (small size) to be about twenty-five tons per day.

Respectfully,  
— GEO. O. KILBOURNE.

Send for catalogue and particulars.

JOHN P. CULVER, Civil Engineer.

FRANK H. JACKSON, Mining Engineer

JOHN P. CULVER & COMPANY,  
ASSAYERS, MINERALOGISTS and MINING ENGINEERS,  
145 South Broadway, - LOS ANGELES, CAL.

J. K. EVELETH

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ASSAYERS

Assays and Analyses of Ores. Practical Mill-tests by 3-Stamp Mill and Concentrating Plant.  
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Manufacturers of and Dealers in

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Smelting**

**MACHINERY**

Foundry and Machine Shops.

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**TOOL MAKING OF ALL KINDS**

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## LLEWELLYN IRON WORKS.

— Manufacturers and Dealers in —

All Kinds of Mining, Smelting and Milling Machinery, LOS ANGELES, CAL.



## ORE TARIFF.

From Points in Mexico, New Mexico, Texas and Arizona, to  
El Paso, Pueblo, Denver and Kansas City.

## ATCHISON, TOPEKA &amp; SANTA FE R. R.

FROM	TO	Car Loads, in dollars and cents per ton of 2,000 lbs.			
		Ore Concentrates	Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$300 per ton.
Guaymas...Mex.	El Paso	10 00	11 50	17 50	
	Pueblo	13 50	15 00	17 00	
	Denver	15 00	16 50	18 50	
	Kansas City	15 50	17 00	19 00	
Oriz... "	El Paso	9 50	11 00	13 00	
	Pueblo	12 50	14 00	16 00	
	Denver	14 00	15 50	17 50	
	Kansas City	14 50	16 00	18 00	
Torres... "	El Paso	9 00	10 50	12 50	
	Pueblo	11 50	13 00	15 00	
	Denver	13 00	14 00	16 50	
	Kansas City	13 50	15 00	17 00	
Hermosillo... "	El Paso	8 50	10 00	12 00	
	Pueblo	10 00	11 50	13 50	
	Denver	11 50	13 00	15 00	
	Kansas City	12 00	13 50	15 50	
Pesqueira... "	El Paso	8 00	9 50	11 50	
	Pueblo	10 00	11 50	13 50	
	Denver	11 50	13 00	15 00	
	Kansas City	12 00	13 50	15 50	
Querobagi... "	El Paso	7 00	8 50	10 50	
	Pueblo	10 00	11 50	13 50	
	Denver	11 50	13 00	15 00	
	Kansas City	11 50	13 00	15 00	
Santa Ana... "	El Paso	6 50	8 00	10 00	
	Pueblo	9 50	11 00	13 00	
	Denver	11 00	12 50	14 50	
	Kansas City	11 50	13 00	15 00	
Magdalena... "	El Paso	6 00	7 50	9 50	
	Pueblo	9 00	11 00	13 00	
	Denver	11 00	12 50	14 50	
	Kansas City	11 50	13 00	15 00	
Imuris... "	El Paso	5 50	7 00	9 00	
	Pueblo	8 50	10 50	12 50	
	Denver	10 50	12 00	14 00	
	Kansas City	11 00	12 50	14 50	
Nogales... A. T.	El Paso	5 00	6 50	8 50	
	Pueblo	8 00	10 00	12 00	
	Denver	10 00	11 50	13 50	
	Kansas City	10 50	12 00	14 00	
Calabasas... "	El Paso	5 00	6 50	8 50	
	Pueblo	8 00	10 00	12 00	
	Denver	10 00	11 50	13 50	
	Kansas City	10 50	12 00	14 00	
Sanford... "	El Paso	5 00	6 50	8 50	
	Pueblo	8 00	10 00	12 00	
	Denver	10 00	11 50	13 50	
	Kansas City	10 50	12 00	14 00	
Crittenden... "	El Paso	4 75	6 25	8 25	
	Pueblo	7 75	9 25	11 25	
	Denver	9 75	11 25	13 25	
	Kansas City	10 00	11 50	13 50	
Fairbank... "	El Paso	4 40	5 90	7 90	
	Pueblo	7 40	8 90	10 90	
	Denver	9 40	10 90	12 90	
	Kansas City	10 00	11 50	13 50	
Tucson... "	El Paso	4 35	5 85	7 85	
	Pueblo	7 35	8 85	10 85	
	Denver	9 35	10 85	12 85	
	Kansas City	10 00	11 50	13 50	
Benson... "	El Paso	3 80	5 30	7 30	
	Pueblo	6 80	8 30	10 30	
	Denver	8 80	10 30	12 30	
	Kansas City	10 00	11 50	13 50	
Steins Pass, N.M.	El Paso	3 00	4 50	6 50	
	Pueblo	6 00	7 50	9 50	
	Denver	8 00	9 50	11 50	
	Kansas City	10 00	11 50	13 50	
Lordsburg... "	El Paso	2 50	4 00	6 00	
	Pueblo	5 50	7 00	9 00	
	Denver	7 50	9 00	11 00	
	Kansas City	9 50	11 00	13 00	
Silver City... "	El Paso	2 50	4 00	6 00	
	Pueblo	5 50	7 00	9 00	
	Denver	7 50	9 00	11 00	
	Kansas City	9 50	11 00	13 00	
Hudson... "	El Paso	2 40	3 90	5 90	
	Pueblo	5 40	6 90	8 90	
	Denver	7 40	8 90	10 90	
	Kansas City	9 40	10 90	12 90	
Deming... "	El Paso	2 20	3 70	5 70	
	Pueblo	5 20	6 70	8 70	
	Denver	7 20	8 70	10 70	
	Kansas City	9 20	10 70	12 70	
Florida and Lake Valley... "	El Paso	2 20	3 70	5 70	
	Pueblo	5 20	6 70	8 70	
	Denver	7 20	8 70	10 70	
	Kansas City	9 20	10 70	12 70	
Nutt... "	El Paso	2 20	3 70	5 70	
	Pueblo	5 20	6 70	8 70	
	Denver	7 20	8 70	10 70	
	Kansas City	9 20	10 70	12 70	
El Paso... "	El Paso	2 00	3 50	5 50	
	Pueblo	5 00	6 50	8 50	
	Denver	7 00	8 50	10 50	
	Kansas City	9 00	10 50	12 50	
Las Cruces... "	El Paso	1 50	3 00	5 00	
	Pueblo	4 50	6 00	8 00	
	Denver	6 50	8 00	10 00	
	Kansas City	8 50	10 00	12 00	
Rincon... "	El Paso	2 00	3 50	5 50	
	Pueblo	5 00	6 50	8 50	
	Denver	7 00	8 50	10 50	
	Kansas City	9 00	10 50	12 50	

FROM

TO

Car Loads in dollars and per

ton of 2,000 lbs.

Ore Concentrates

Valuation not to exceed \$50 per ton.

Valuation not to exceed \$100 per ton.

Valuation not to exceed \$300 per ton.

Lead Bullion, valuation not to exceed \$100 per ton.

Base Metal, Copper Matte, Bar and Black Copper, valuation not to exceed \$300 per ton.

A. T. &amp; S. F. R. R.

ATLANTIC &amp; PACIFIC RAILROAD

Engle... N. M.	El Paso	2 20	3 60	5 60	5 00
Crocker... "	Pueblo	5 20	6 60	8 60	10 20
	Denver	7 20	8 60	10 60	11 40
	Kansas City	9 20	10 60	12 60	14 20
Lava... "	El Paso	2 20	3 60	5 60	5 00
	Pueblo	5 20	6 60	8 60	10 20
	Denver	7 20	8 60	10 60	11 40
	Kansas City	9 20	10 60	12 60	14 20
San Marcial... "	El Paso	2 20	3 60	5 60	5 00
	Pueblo	5 20	6 60	8 60	10 20
	Denver	7 20	8 60	10 60	11 40
	Kansas City	9 20	10 60	12 60	14 20
Carthage... "	El Paso	2 20	3 60	5 60	5 00
	Pueblo	5 20	6 60	8 60	10 20
	Denver	7 20	8 60	10 60	11 40
	Kansas City	9 20	10 60	12 60	14 20
San Antonio... "	El Paso	2 40	3 80	5 80	5 80
	Pueblo	5 40	6 80	8 80	10 40
	Denver	7 40	8 80	10 80	11 80
	Kansas City	9 40	10 80	12 80	14 80
Magdalena... "	El Paso	2 80	4 20	6 20	6 20
	Pueblo	5 80	7 20	9 20	10 80
	Denver	7 80	9 20	11 20	12 80
	Kansas City	9 80	11 20	13 20	15 20
Socorro... "	El Paso	2 80	4 20	6 20	6 20
	Pueblo	5 80	7 20	9 20	10 80
	Denver	7 80	9 20	11 20	12 80
	Kansas City	9 80	11 20	13 20	15 20
Albuquerque... "	El Paso	3 00	4 40	6 40	7 00
	Pueblo	6 00	7 40	9 40	10 80
	Denver	8 00	9 40	11 40	12 80
	Kansas City	10 00	11 40	13 40	15 20
Bernalillo... "	El Paso	3 20	4 60	6 60	7 20
	Pueblo	6 20	7 60	9 60	11 00
	Denver	8 20	9 60	11 60	13 00
	Kansas City	10 20	11 60	13 60	15 40
Wallace... "	El Paso	3 40	4 80	6 80	7 40
	Pueblo	6 40	7 80	9 80	11 20
	Denver	8 40	9 80	11 80	13 20
	Kansas City	10 40	11 80	13 80	15 60
Los Cerillos... "	El Paso	3 60	5 00	7 00	7 60
	Pueblo	6 60	8 00	10 00	11 40
	Denver	8 60	10 00	12 00	13 40
	Kansas City	10 60	12 00	14 00	15 80
Flagstaff, A. T.	El Paso	6 50	8 00	10 00	10 00
Prescott Jct. "	Pueblo	7 50	9 00	11 00	11 00
	Denver	9 50	11 00	13 00	13 00
	Kansas City	11 50	13 00	15 00	15 00
Peach Spgs. "	El Paso	7 50	9 00	11 00	11 00
Hackberry... "	Pueblo	8 50	10 00	12 00	12 00
	Denver	10 50	12 00	14 00	14 00
	Kansas City	12 50	14 00	16 00	16 00
Kingman... "	El Paso	7 50	9 00	11 00	11 00
	Pueblo	8 50	10 00	12 00	12 00
	Denver	10 50	12 00	14 00	14 00
	Kansas City	12 50	14 00	16 00	16 00
Yucca... "	El Paso	7 50	9 00	11 00	11 00
	Pueblo	8 50	10 00	12 00	12 00
	Denver	10 50	12 00	14 00	14 00
	Kansas City	12 50	14 00	16 00	16 00
Needles... Cal.	El Paso	7 75	9 25	11 25	11 25
	Pueblo	8 75	10 25	12 25	12 25
	Denver	10 75	12 25	14 25	14 25
	Kansas City	12 75	14 25	16 25	16 25
Fenner... "	El Paso	8 25	9 75	11 75	11 75
	Pueblo	9 25	10 75	12 75	12 75
	Denver	11 25	12 75	14 75	14 75
	Kansas City	13 25	14 75	16 75	16 75
Bagdad... "	El Paso	8 50	10 00	12 00	12 00
	Pueblo	9 50	11 00	13 00	13 00
	Denver	11 50	13 00	15 00	15 00
	Kansas City	13 50	15 00	17 00	17 00
Daggett... "	El Paso	9 00	10 50	12 50	12 50
	Pueblo	10 00	11 50	13 50	13 50
	Denver	12 00	13 50	15 50	15 50
	Kansas City	14 00	15 50	17 50	17 50
Barstow... "	El Paso	9 00	10 50	12 50	12 50
	Pueblo	10 00	11 50	13 50	13 50
	Denver	12 00	13 50	15 50	15 50
	Kansas City	14 00	15 50	17 50	17 50
Kramer... "	El Paso	9 50	11 00	13 00	13 00
	Pueblo	10 50	12 00	14 00	14 00
	Denver	12 50	14 00	16 00	16 00
	Kansas City	14 50	16 00	18 00	18 00
Mojave... "	El Paso	10 00	11 50	13 50	13 50
	Pueblo	11 00	12 50	14 50	14 50
	Denver	13 00	14 50	16 50	16 50
	Kansas City	15 00	16 50	18 50	18 50

## Rates on Copper or Zinc Ore to Canon City.

Taking Effect July 1st, 1891.—So far as rates on Copper or Zinc Ores are concerned, Canon City, Col., will be considered as common with Pueblo; in other words the rates shown in Tariff as applying on shipments of Ore to Pueblo, will also apply on shipments of Copper or Zinc Ore to Canon City.

In the absence of positive information as to the value of Ore, Ore Concentrates, or Base Metal, Agents will bill at rates sufficiently high to protect the Company. These rates can be corrected when evidence of actual value is produced.

The market price at destination, to be verified by assays made

by the Railroad Company, at owner's expense, will govern the value and determine the rate.

Agents must cause shippers to understand the condition upon which these rates are based, and should make their receipts read: "Rates subject to correction according to value at destination."

These rates only apply on lots of ten tons or over. On lots of four tons and under ten, 20 per cent, and on lots of one ton and less than four, 40 per cent will be added to above rates. Base Metal, Copper Matte and Ore Concentrates, in lots of less than one ton, will take first-class rates from all the above points, except when the rate based on valuation makes it higher; that rates on small lots of high value may not be less than the rates when in lots of one ton or over as above.

Charges on Ore in car-loads must be guaranteed, and on lots less than a car-load must in all cases be prepaid.

Omaha Rates.—The Rates to Omaha, Neb., all grades, will be \$1 per ton higher than the rates to Kansas City.



# THE PUEBLO Smelting and Refining Company,

PUEBLO, COLORADO.

BUYERS OF  
Gold, Silver, Lead and Copper Ores,  
Copper Matte and Bullion.

## Refiners of Gold, Silver, Lead and Copper.

Manufacturers of Bar and Pig Lead, Lead Pipe, Antimonial Lead, Copper Ingots,  
Granulated Test Leads and Litharge.

Pays Highest Prices for all classes of Ores.

Especial Attention to Sampling by most Approved Processes.

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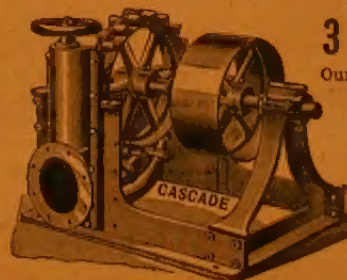
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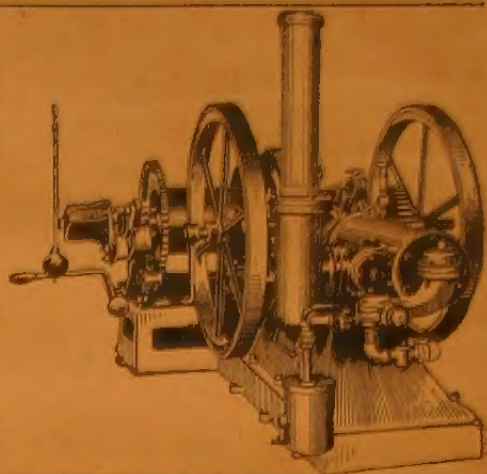
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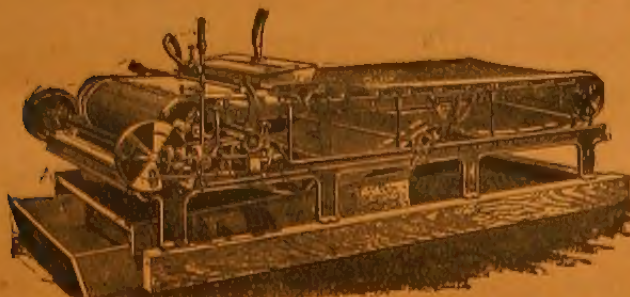
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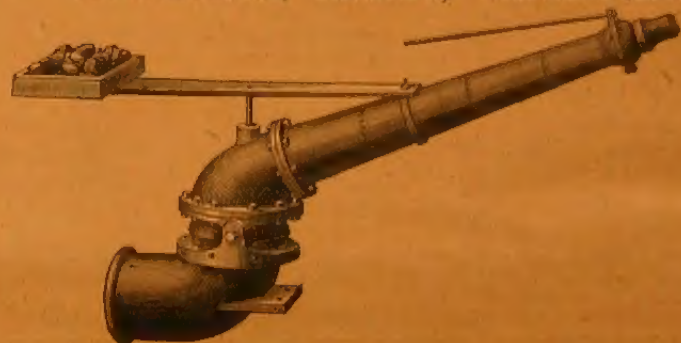
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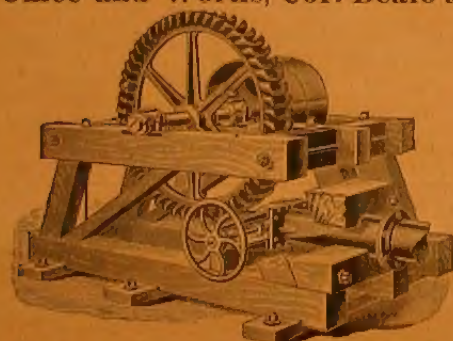
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